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ABSTRACT

This is the first part of a three-part curriculum guide dedicated to improving the nutritional status of children and adolescents as well as inspiring lifetime habits of healthy eating. It is also a total nutrition education program that encompasses nutritional aspects of the child's daily life both at school and at home. Teachers are provided with specific grade-level lesson plans and learning activities that include student handouts and worksheets, teacher resource pages, and overhead transparency masters. The guide is organized into five sections. The first section describes the program including cultural awareness information, the interaction of nutrition education with school food service, parent involvement, and program visibility. Section 2 provides implementation of the ESR IV curriculum guide. The third section addresses modifying ESR IV for special populations. Section 4 presents an instructor's resource guide for teaching nutrition education. The final section presents prekindergarten through grade 4 nutrition lessons highlighting the influence of different cultural groups on Texas civilization. Nine appendices include: suggested teacher resources; bibliography; a pattern for daily food choices and school breakfast and lunch patterns; recommended dietary allowances; a food composition table; dietary guidelines for Americans; a glossary of terms; suggested instructional strategies; and a health hotline of agencies and organizations. (LL)

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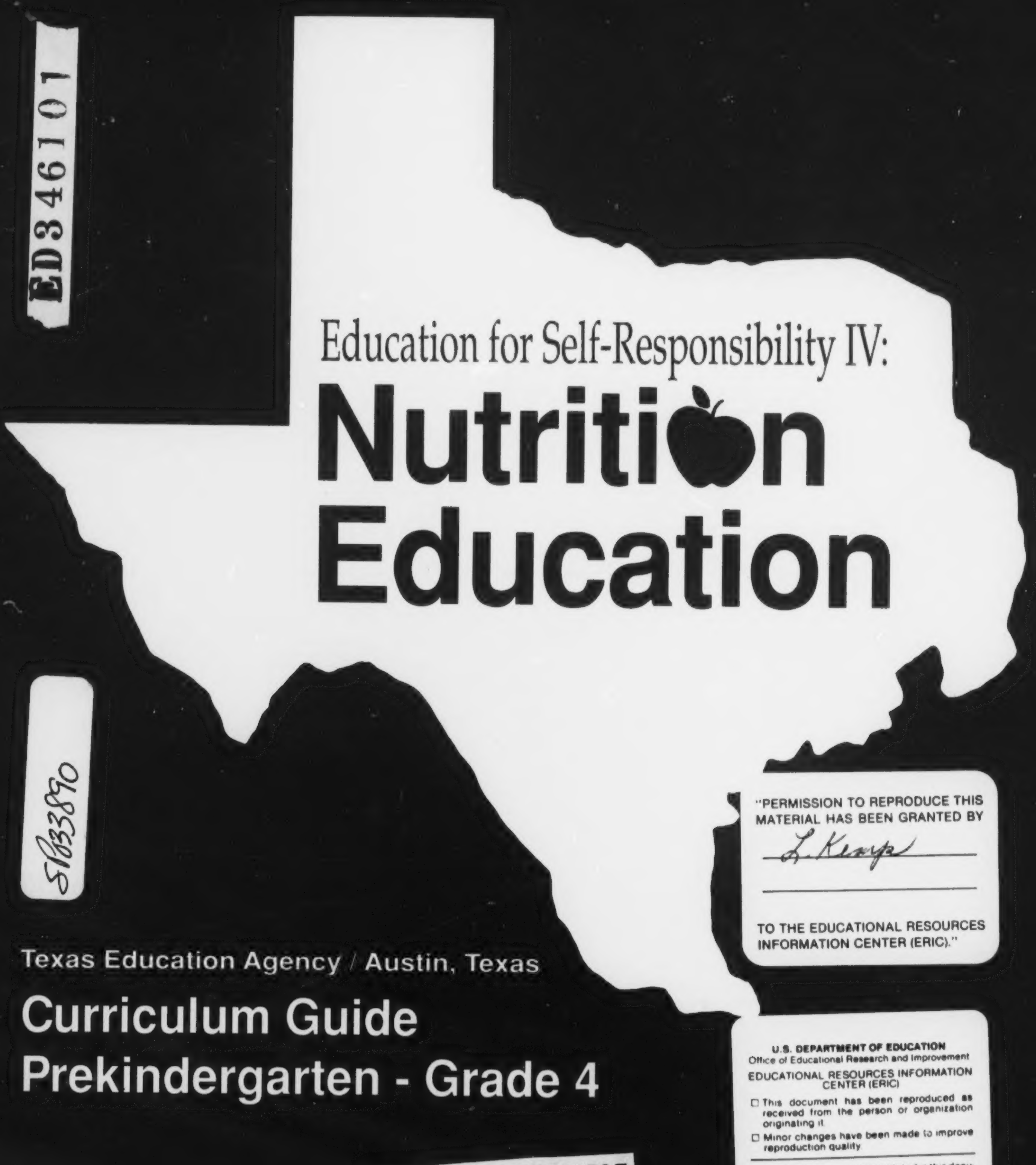

Education for Self-Responsibility IV:

Nutrition Education

SP033890

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Curriculum Guide
Prekindergarten - Grade 4

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EDUCATION FOR SELF-RESPONSIBILITY IV: NUTRITION EDUCATION

Curriculum Guide

Prekindergarten-Grade 4

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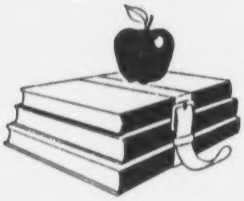
The Nutrition Education Program



EDUCATION FOR SELF-RESPONSIBILITY

Nutrition is a multifaceted science that affects all people, regardless of age, gender, or nationality. Changes in lifestyles, eating patterns, and eating habits have brought renewed attention to the relationship between nutrition and optimal health and wellness. Nutrition education is vital to the long range improvement of public health.

An integral part of educating children is helping them to understand their health and nutritional needs. Behavioral, emotional, intellectual, and physical growth is dependent on good nutrition and health care, and schools are the most effective community network for providing nutrition education. It is important to feed the mind with sound nutrition knowledge at the same time the child is making choices for feeding the body.

Education for Self-Responsibility IV: Nutrition Education (ESR IV) is a three volume curriculum guide dedicated to improving the nutritional status of children and adolescents as well as inspiring lifetime habits of healthy eating. *ESR IV* is a total nutrition education program that encompasses nutritional aspects of the child's daily life both at school and at home. The *ESR IV* curriculum guide provides teachers with specific grade-level lesson plans and learning activities that include student handouts and worksheets, teacher resource pages, and overhead transparency masters.

The *ESR IV* sample lessons contain instructional strategies that cover the following concepts:

- basic principles of nutrition including the relationship of good nutrition, health, and wellness
- development of skills needed to make wise food choices and to develop healthy dietary habits
- nutritional needs throughout all stages of the life cycle
- increased awareness of different cultures with emphasis on cultural dietary practices
- investigation and analysis of current nutrition issues including diet and disease, eating disorders, fad diets, weight control, and physical fitness as well as new developments and trends in the food industry

The *ESR IV* total program involves the entire school campus taking an active role in nutrition education. Administrators, teachers, school food service personnel, and school health professionals must work together to reinforce the new nutrition knowledge and skills for making wise food choices that are being taught throughout the *ESR IV* lessons. School vending machines filled with nutritious foods such as fruit, fruit juices, sandwiches, and yogurt strengthen the school's commitment to help students make wise food choices. The addition of salad bar selections and nutritious snack foods to the school food service program also support nutrition education in the classroom. Finally, it is critically important that school personnel serve as role models by making wise food choices themselves.

Through scientific and clinical research, much has been learned about the nutritional needs of children and adolescents; however, this knowledge must be interpreted and applied to their lives in order for the full potential of nutrition education to be accomplished.

CULTURAL AWARENESS

The *ESR IV* curriculum guide contains additional teacher resource information entitled, "Cultural Awareness." These units are found at the beginning of each appropriate grade-level section and describe the influences of different cultural groups on the people of Texas.

Beginning with prekindergarten and continuing through the eighth grade, the "Cultural Awareness" sections summarize the influence of Native American, Mexican-American, African-American, German, Czech, Polish, French, Irish, Italian, Middle Eastern, and Asian-American cultures on Texas civilization. Detailed information concerning the food habits, lifestyles, folkways, and celebrations of these varied cultures is discussed in these units. The unit that precedes each grade-level section corresponds with the cultural group that is to be emphasized at each grade level.

The *ESR IV* curriculum for high school students emphasizes diet-related diseases, prevention techniques, and current nutrition issues rather than a specific culture; however, *ESR IV* social studies lessons for high school students incorporate cultural information that correlates with the high school social studies curriculum.

The "Cultural Awareness" resource information is a valuable teaching tool and resource for teachers using the *ESR IV* lesson plans.

THE INTERACTION OF NUTRITION EDUCATION WITH SCHOOL FOOD SERVICE

School food service has a major impact on the eating patterns of many school-age children. The school food service program gives students an opportunity to practice what is learned about eating for good health. Common to all school districts is the large number of children who depend on the School Lunch and School Breakfast Programs for the major nutritional contributions to their daily diet. The *ESR IV: Nutrition Education* curriculum includes lessons at all grade levels that directly correlate with the school food service programs and involve instructional strategies based on balanced meals served in the school cafeteria.

The *ESR IV* lessons that specifically correlate with school food service are identified with a school food service icon. These lessons contain learning activities that involve the cafeteria manager, the school food service menus, and the foods served in the school cafeteria as teaching aids in nutrition.

A cooperative effort of school food service personnel, teachers, and administrators to promote nutrition education can greatly impact the primary goal of improved nutrition for all school-age children.

The National School Lunch Program

Over one hundred years of development, testing, evaluation, and research have resulted in the effective school food service programs available to American school children today. Although school food service programs in this country can be traced back to the 1890s, European countries such as Germany, France, England, Holland, Switzerland, Italy, Sweden, and Norway all had school feeding programs dating back to the 18th century.

The first school feeding programs in the United States began with sporadic food services undertaken by private societies and associations that were interested in child welfare and education. The depression years of the 1930s deepened the concern over hunger and malnourishment among school children. Many states and municipalities adopted legislation to enable schools to serve noonday meals to their children. In 1932 and 1933, the Reconstruction Finance Corporation granted loans to several towns in southwestern Missouri to cover the cost of the labor needed to prepare and serve school lunches. Such federal assistance was expanded to 39 states in 1933 and 1934 under the operations of the Civil Works Administration and the Federal Emergency Relief Administration. In 1935, Congress provided that surplus agricultural commodities be donated for the school lunch program.

During World War II, nearly one-third of the young men turned down for military service were rejected due to nutritional deficiencies. This led to the passage of the National School Lunch Act in 1946 which permanently established school lunch as an integral part of the school system.

Today, the school lunch program is governed by the U.S. Department of Agriculture and State Department of Education regulations as well as local board of education policies.

Lunch Patterns

The goal of the National School Lunch Program is to safeguard the health and well-being of our nation's children. Meals served in the National School Lunch Program (NSLP) should be nutritious and well-balanced. The meal patterns required by the NSLP regulations are designed to provide children with approximately one third of the nutrients they need according to the Recommended Dietary Allowances for their age group.

A school lunch consists of five different food items from four food component groups. The four components include:

- meat/meat alternate
- bread/bread alternate
- vegetable/fruit
- fluid milk

Schools must provide two servings of different vegetables/fruits and one food item from each of the other three component groups. The recommended serving portion of each component can be found in the School Lunch Patterns chart found in the appendices. The important role that school food service plays in the nutritional health of children prompted the development of revised USDA recipes to reflect reduced fat, sugar, and salt in school meals.

The School Breakfast Pattern

The School Breakfast Program began under the Child Nutrition Act of 1966. It was originally a pilot project intended for indigent areas and regions where children had to travel a great distance to school. In 1975, legislation made the School Breakfast Program available to all areas.

School breakfast must include:

- fluid milk
- vegetable/fruit or full strength juice
- two servings of bread/bread alternate or meat/meat alternate or a combination of one bread/bread alternate and one meat/meat alternate

The recommended serving portion of each component can be found in the School Breakfast Pattern chart in the appendices.

Major Nutrients Supplied By School Meals

Children and teenagers require nutrients for growth and maintenance of body size and functions, and school meals are designed to provide these major nutrient contributions. The following nutrients are supplied through foods served daily in school food service programs:

- **Meats or Meat Alternates**
  protein
  iron
  thiamin, riboflavin, niacin, B_6 (pyridoxine)
  B_{12} (cyanocobalamin)
  magnesium
- **Vegetables and Fruits**
  vitamin A (retinol)
  vitamin C (ascorbic acid)
  iron
  magnesium
  carbohydrate
  folate
- **Breads and Bread Alternates**
  B vitamins—thiamin, riboflavin, niacin
  minerals
  carbohydrate
- **Milk**
  calcium
  protein
  vitamin A
  vitamin D
  riboflavin
  magnesium
  phosphorus
  vitamin B12 (cyanocobalamin)

Offer vs. Serve Provision
The "offer vs. serve" provision is the regulation that allows senior high school students to choose fewer than all the food items within the breakfast and lunch pattern. Students in other grades may do this only if approved by the local school food authority. The regulation requires that students be "offered" four components, and students must choose at least three of these items for their meal to be reimbursable. Declining one or two items does not relieve students from paying the full price for the meal. Only the student may determine which items will be chosen or refused.

Adult Meals and Reimbursement
The benefits of the National School Lunch and Breakfast Programs were designed for children. The reimbursement and commodities received by schools are based on the number of lunches and breakfasts served to students. Although commodities are given to school districts, the district must still pay for storage, transportation, and production of the food. No reimbursement or commodities are provided for meals served to adults; therefore, the adult meal must reflect the actual cost of the meal production. Teachers are served food in the same quantities as specified for middle and high school students.

The School Lunch and School Breakfast Programs provide nutritious meals for American school children each day. Community and school district support of nutrition education and school food service programs is critical if children and adolescents are to be provided with the best opportunity for improved health and well-being.

PARENT INVOLVEMENT

Parental involvement is an important link to the overall success of a nutrition education program. There is a direct relationship between parents' involvement in student learning and the achievement of their children. Parents who take an active role in nutrition education can help their children make healthy eating patterns become a lifestyle habit.

Schools can encourage parental involvement in the nutrition education program by sponsoring parent awareness activities. Some suggested activities that can increase parent awareness of the nutrition education program at school include:

- scheduling PTA programs which educate parents about the *ESR IV* program and include tours of the food service facility

- holding an open house at school with a "tasting party" of the foods served in the School Lunch and School Breakfast Programs
- sending a letter to parents from the teacher and/or the student about the nutrition education program
- providing take-home menus of the school food service programs
- recruiting parent volunteers to assist with classroom activities involving food preparation, to serve as guest speakers for food industry careers, or to share knowledge of multicultural foods with students
- motivating parents to encourage their children to eat nutritious snacks that promote good health

It is the responsibility of school administrators, faculty, and staff to be the catalyst for parent involvement in nutrition education.

PROGRAM VISIBILITY

Students must be continually reminded of the role self-responsibility plays in achieving and maintaining optimal health through good nutrition. The use of posters, "Nutrition Month" (March) activities, and nutrition education emphasis throughout other school programs such as athletics, student councils, Future Educators of America, Future Farmers of America, and Future Homemakers of America can serve to reinforce the learning that takes place in the classroom.

The most powerful reinforcement in teaching good nutritional habits involves the administrators, teachers, school nurses, parents, and other adults as role models who make wise food choices for good health each day.

Implementing the ESR IV *Curriculum Guide*

Education for Self-Responsibility IV: Nutrition Education is a curriculum guide that allows teachers to incorporate important nutrition concepts into the existing course of study. Texas teachers, school nurses, administrators, school food service personnel, and other community health professionals provided valuable input into the development of the *ESR IV* curriculum guide. The challenges offered by our changing society have increased the need for nutrition education to become an integral part of basic education so that children and adolescents can develop self-responsibility for their own personal health and wellness.

The *ESR IV* guide contains three volumes of lesson plans and activities for prekindergarten through Grade 12 which are integrated across seven content areas. Within the guide are sample lesson plans and instructional activities that are correlated with Title 19, Chapter 75, Texas Administrative Code (State Board of Education rules for curriculum). The broad range of nutrition topics provides the teacher with opportunities to select and adapt the lessons into planned course work as well as expand and extend the instruction to include other appropriate essential elements.

The *ESR IV* guide was designed for use by the regular classroom teacher and other instructional staff members within the school. Persons other than the school's instructional staff such as dietitians and medical personnel should serve only in the role of guest speakers and resource persons, not as the teacher or instructional leader.

ESR IV GOALS

The goals for the *ESR IV: Nutrition Education* program include:

- to improve the nutritional health of school age youth through nutrition education and to prepare them for a lifetime of healthy dietary habits
- to develop a nutrition education curriculum guide based on behavioral and instructional objectives that are integrated into the content areas of fine arts, health, language arts, mathematics, science, social studies, and vocational education
- to design lesson plans and learning activities that correlate with the School Lunch and School Breakfast Programs. Learning

experiences should motivate students to apply new nutrition knowledge to the choices they make in the school cafeteria

- to increase student awareness and acceptance of the many cultures and cultural differences found in our world. Learning activities should allow students to analyze, compare, classify, categorize, and differentiate the food choices and dietary habits of people with cultural differences. Learning experiences should also integrate the nutritional value and importance of the dietary mainstays of people with various cultural backgrounds

ESR IV OBJECTIVES

The *ESR IV* objectives are written within a conceptual framework that encompasses the following areas:

- Basic Nutrition Principles
- Selecting A Balanced Diet
- Nutritional Needs During the Life Cycle
- Cultural Aspects of Food
- Nutrition Issues

Many behavioral and instructional objectives are written at each grade level to cover all of these areas within the framework. The instructional activities related to these objectives focus on areas of high interest for students and reflect current concerns in nutrition. The *ESR IV* curriculum empowers children and adolescents with the knowledge and skills needed to make wise food choices for the rest of their lives.

SCOPE AND SEQUENCE

The scope and sequence chart allows the user to see at a glance the overall objectives of the *ESR IV* curriculum for prekindergarten through Grade 12. Dots on the chart indicate the appropriate grade level for implementing each of the objectives.

SCOPE AND SEQUENCE

Prekindergarten through Grade Four

Goals:

- Improve the nutritional health of school-age youth through nutrition education and prepare them for a lifetime of healthy dietary habits.
- Motivate students to apply new nutrition knowledge to choices they make in the school cafeteria through School Breakfast and School Lunch Programs.
- Increase student awareness and acceptance of the many cultures and cultural differences in our world. Recognize the importance of the dietary mainstays of people with various cultural backgrounds.

A. Basic Nutrition Principles	**PK**	**K**	**1**	**2**	**3**	**4**
1. Identify food as the source of nutrients needed for growth, energy, and health.	●	●	●	●	●	
2. Identify different foods.	●	●				
3. Name the sources of food.	●	●	●			
4. Identify foods in different forms using all five senses.	●	●	●			
5. Explain the importance of safe handling of food.	●	●	●	●	●	●
6. Define the term *nutrients.*			●	●	●	
7. Explain the functions of nutrients.					●	
8. Describe the relationship of food to energy, growth, and health.						●
9. Identify the functions of nutrients as they relate to growth and health.						●
10. List the functions of dietary fiber in the body.						●
B. Selecting a Nutritionally Balanced Diet						
1. Make wise food choices as part of self-responsibility for health and wellness.	●	●	●	●	●	●
2. Make wise food choices at snack time.	●	●	●	●	●	●
3. Explain the importance of breakfast.	●	●	●	●	●	
4. Develop positive attitudes about food.	●	●				
5. Make wise food choices at mealtime.			●	●		
6. Explore new foods in each food group.			●	●	●	●
7. Classify foods using a food grouping system.				●	●	●
8. Make wise food choices using the daily food guide.					●	●
9. Select nutritionally balanced meals each day.					●	
10. Develop healthy eating habits.						●
11. Analyze daily food choices.						●

SCOPE AND SEQUENCE

Prekindergarten through Grade Four

C. Nutritional Needs During the Life Cycle	PK	K	1	2	3	4
1. Discuss nutritional needs of four, five, and six year olds.	•	•				
2. Discuss nutritional needs of six and seven year olds.			•			
3. Determine the results of unhealthy food habits.			•	•	•	
4. Discuss nutritional needs of seven and eight year olds.				•		
5. Discuss nutritional needs of eight and nine year olds.					•	
6. Discuss nutritional needs of nine and ten year olds.						•
7. Examine the effects of poor dietary habits.						•
D. Cultural Aspects of Food						
1. Investigate the customs of Native-American cultures.		•				
2. Discuss family food preferences.	•	•	•	•	•	•
3. Examine food traditions.	•	•	•	•	•	•
4. Investigate the customs of Mexican-American cultures.			•			
5. Develop an appreciation for foods from different cultural groups.			•	•	•	•
6. Explore food from different cultures.			•			
7. Investigate the customs of African-American cultures.				•		
8. Explore food from different cultures and categorize them using a food grouping system.				•	•	•
9. Analyze the customs of German, Czechoslovakian, and Polish cultures.					•	
10. Analyze the customs of French, Irish, and Italian cultures.						•
E. Nutrition Issues						
1. Explain the role of nutrition and physical fitness in maintaining good health.	•	•	•	•	•	•
2. Identify basic nutrition information on food labels.					•	•
3. Discuss wise consumer food-buying skills.					•	•

SCOPE AND SEQUENCE

Grade Five through Grade Eight

Goals:

- Improve the nutritional health of school-age youth through nutrition education, and prepare them for a lifetime of healthy dietary habits.
- Motivate students to apply new nutrition knowledge to choices they make in the school cafeteria through School Breakfast and School Lunch Programs.
- Increase student awareness and acceptance of the many cultures and cultural differences in our world. Recognize the importance of the dietary mainstays of people with various cultural backgrounds.

A. Basic Nutrition Principles	5	6	7	8
1. Describe the relationship of food to energy, growth, and health.	•	•		
2. Identify the functions of nutrients as they relate to growth and health.	•	•		
3. Distinguish between nutrition facts and fallacies.	•	•	•	•
4. List the functions of dietary fiber in the body.	•	•	•	•
5. Recognize the effects of food on health and appearance.	•	•	•	•
6. Explain the importance of safe handling of food.	•	•		
7. Explain the physiological, psychological, and social implications of food.			•	•
8. Identify nutrients, their sources, and their functions.			•	•
9. Compare the nutritive value of foods.			•	•
10. Discuss the Dietary Guidelines for Americans.			•	•
11. Identify the factors involved in preventing food-borne illness.			•	•
B. Selecting a Nutritionally Balanced Diet				
1. Make wise food choices as part of self-responsibility for health and wellness.	•	•	•	•
2. Make wise food choices using the pattern for daily food choices.	•	•		
3. Make wise food choices when eating away from home.	•	•	•	•
4. Make wise food choices at snack time.	•	•	•	•
5. Classify foods using a food grouping system.	•	•		
6. Illustrate ways to avoid excess cholesterol, fat, salt, and sugar.	•	•		
7. Explore the influence of food advertising and the media on food habits.	•	•	•	•
8. Analyze personal food habits.			•	•
9. Determine the effects of peer pressure on food choices.			•	•

SCOPE AND SEQUENCE

Grade Five through Grade Eight

C. Nutritional Needs During the Life Cycle	**5**	**6**	**7**	**8**
1. Discuss nutritional needs of the pre-adolescent and the adolescent.	•	•		
2. Examine the effects of poor dietary habits.	•	•		
3. Discuss nutritional needs of adolescents.			•	•
4. Discuss ways to achieve a low-fat diet.			•	•
5. Explain the relationship of high intakes of sodium to hypertension.			•	•
6. Examine ways to reduce intake of cholesterol.			•	•
7. List strategies for reducing the amount of sugar in the diet.			•	•
8. Evaluate dietary needs of women during pregnancy and lactation.			•	•
9. Describe the relationship between nutrition and the prevention and treatment of health problems (cancer, common cold, diabetes, heart disease, PKU).			•	•
D. Cultural Aspects of Food				
1. Investigate the customs of Middle Eastern cultures.	•			
2. Investigate the customs of Asian cultures.		•		
3. Discuss family food preferences.	•	•	•	•
4. Examine food traditions.	•	•	•	•
5. Develop an appreciation for foods from different cultural groups.	•	•		
6. Examine the influence of other cultures on our current food habits.	•	•		
7. Analyze the cultural and social aspects of food.	•	•		
8. Explore the development of attitudes toward food.	•	•		
9. Analyze the customs of early Texas settlers.			•	•
10. Develop an understanding of cultural food differences.			•	•
11. Investigate cultural influence on food in Texas.			•	•
E. Nutrition Issues				
1. Explain the role of nutrition and physical fitness in maintaining good health.	•	•	•	•
2. Analyze nutrition information on food labels.	•	•	•	•
3. Identify various eating disorders and their symptoms.	•	•		
4. Distinguish between reliable and unreliable sources of nutrition information.	•	•	•	•
5. Discuss wise consumer food-buying skills.	•	•	•	•
6. Determine the relationship between nutrition and weight control.			•	•
7. Evaluate the claims made by promoters of fad diets.			•	•
8. Describe various eating disorders and their symptoms.			•	•
9. Investigate new developments in food trends.			•	•

SCOPE AND SEQUENCE

Grade Nine through Grade Twelve

Goals:

- Improve the nutritional health of school-age youth through nutrition education, and prepare them for a lifetime of healthy dietary habits.
- Motivate students to apply new nutrition knowledge to choices they make in the school cafeteria through School Breakfast and School Lunch Programs.
- Increase student awareness and acceptance of the many cultures and cultural differences in our world. Recognize the importance of the dietary mainstays of people with various cultural backgrounds.

A. Basic Nutrition Principles	9	10	11	12
1. Define the term *nutrition*.	•	•	•	•
2. Explain the physiological, psychological, and social implications of food.	•	•	•	•
3. Identify nutrients, their sources, and their functions.	•	•	•	•
4. Compare the nutritive value of foods.	•	•	•	•
5. Distinguish between nutrition facts and fallacies.	•	•	•	•
6. List the functions of dietary fiber in the body.	•	•	•	•
7. Discuss the Dietary Guidelines for Americans.	•	•	•	•
8. Analyze the relationship between nutrition, health, and wellness.	•	•	•	•
9. Recognize the effects of food on health and appearance.	•	•	•	•
10. Analyze the factors involved in preventing food-borne illness.	•	•	•	•
11. Outline methods for retaining nutrients in foods.	•	•	•	•
B. Selecting a Nutritionally Balanced Diet				
1. Make wise food choices as part of self-responsibility for health and wellness.	•	•	•	•
2. Make wise food choices when eating away from home.	•	•	•	•
3. Make wise food choices at snack time.	•	•	•	•
4. Analyze personal food habits.	•	•	•	•
5. Determine the effects of peer pressure on food choices.	•	•	•	•
6. Explore the influence of food advertising and the media on food habits.	•	•	•	•
7. Examine eating patterns from the past and predict the future.	•	•	•	•

SCOPE AND SEQUENCE

Grade Nine through Grade Twelve

C. Nutritional Needs During the Life Cycle	9	10	11	12
1. Describe nutritional needs throughout the life cycle.	•	•	•	•
2. Discuss ways to achieve a low-fat diet.	•	•	•	•
3. Explain the relationship of high intakes of sodium to hypertension.	•	•	•	•
4. Examine ways to reduce intake of cholesterol.	•	•	•	•
5. List strategies for reducing the amount of sugar in the diet.	•	•	•	•
6. Evaluate dietary needs of women during pregnancy and lactation.	•	•	•	•
7. Describe the relationship between nutrition and the prevention and treatment of health problems (cancer, common cold, diabetes, heart disease, PKU).	•	•	•	•
D. Cultural Aspects of Food				
1. Discuss family food preferences.	•	•	•	•
2. Examine food traditions at home and around the world.	•	•	•	•
3. Discuss factors affecting the world food supply.	•	•	•	•
E. Nutrition Issues				
1. Explain the role of nutrition and physical fitness in maintaining good health.	•	•	•	•
2. Determine the relationship between nutrition and weight control.	•	•	•	•
3. Evaluate the claims made by promoters of fad diets.	•	•	•	•
4. Analyze the problems and symptoms associated with various eating disorders.	•	•	•	•
5. Analyze nutrition information on food labels.	•	•	•	•
6. Distinguish between reliable and unreliable sources of nutrition information.	•	•	•	•
7. Investigate new developments in food trends.	•	•	•	•
8. Discuss wise consumer food-buying skills.	•	•	•	•
9. Analyze the economics of good nutrition.	•	•	•	•
10. Investigate claims concerning natural and organic foods.	•	•	•	•
11. Assess the role of vitamin and mineral supplements.	•	•	•	•
12. Review current events in the field of nutrition.	•	•	•	•

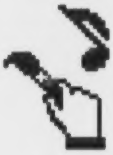
ORGANIZATION OF ESR IV

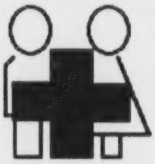
ESR IV is divided into three volumes that are designated for prekindergarten - Grade 4, Grades 5 - 8, and Grades 9 - 12. Each volume stands alone for distribution to appropriate school personnel. Each of three volumes are divided into the following sections: (1) introductory materials, (2) sample lessons, and (3) resources.

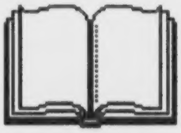
The introductory materials are at the beginning of each volume and contain useful information for implementing a nutrition education program such as goals, objectives, scope and sequence, and cultural awareness. It also includes an Instructor's Resource Guide for Teaching Nutrition Education which provides teachers with the background nutrition information they need to feel comfortable teaching the *ESR IV* lessons. Sample lesson plans follow the introductory materials in each volume. These lessons are appropriate to each grade level and have corresponding student worksheets, handouts, teacher resource pages, and transparency masters. At the end of each volume is a collection of resources for the teacher to use with the lesson plans.

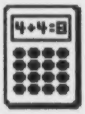
The sample lessons are arranged by grade level beginning with prekindergarten and ending with high school. The suggested subject areas are identified by an icon in the upper right-hand corner of each page. The lessons that contain the school food service icon in the lower right-hand corner are specifically designed to include activities to correlate with the school food service programs.

Icons for the *ESR IV* sample lessons include:

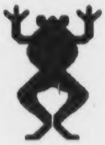

Fine Arts

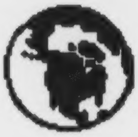

Health

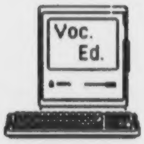

Language Arts



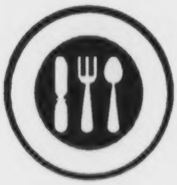
Mathematics


Science

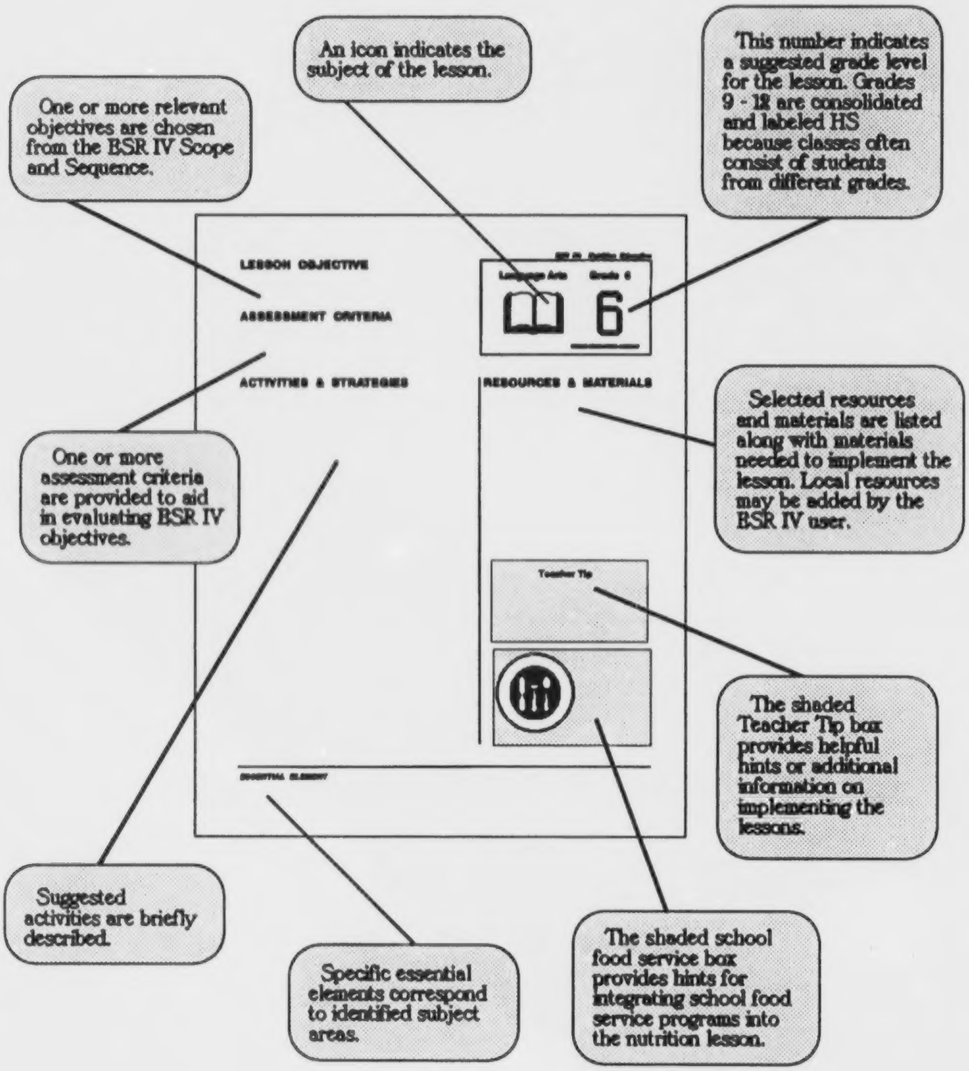

Social Studies



Vocational Education


School Food Service

USING THE ESR IV LESSONS


LESSON OBJECTIVE
ASSESSMENT CRITERIA
ACTIVITIES & STRATEGIES
Language Arts
Grade 6
6
RESOURCES & MATERIALS
Teacher Tip
ESSENTIAL ELEMENT

One or more relevant objectives are chosen from the BSR IV Scope and Sequence.

An icon indicates the subject of the lesson.

This number indicates a suggested grade level for the lesson. Grades 9 - 12 are consolidated and labeled HS because classes often consist of students from different grades.

One or more assessment criteria are provided to aid in evaluating BSR IV objectives.

Selected resources and materials are listed along with materials needed to implement the lesson. Local resources may be added by the BSR IV user.

The shaded Teacher Tip box provides helpful hints or additional information on implementing the lessons.

Suggested activities are briefly described.

Specific essential elements correspond to identified subject areas.

The shaded school food service box provides hints for integrating school food service programs into the nutrition lesson.

RESOURCES

Appendices at the end of each volume of the curriculum guide include:

- *Suggested Teacher Resources* containing books, government documents, pamphlets, periodicals, and audiovisuals
- *Bibliography* of nutrition education publications
- *A Pattern for Daily Food Choices* consisting of a daily food guide chart based on the USDA 's "Dietary Guidelines for Americans"
- *Recommended Dietary Allowances* established by the National Food and Nutrition Board of the National Academy of Sciences
- *Food Composition Table* consisting of a list of the nutrient composition of selected food items
- *Dietary Guidelines for Americans* adapted from "Nutrition and Your Health: Dietary Guidelines for Americans," U.S.Department of Agriculture and U.S. Department of Health and Human Services
- *Glossary of Terms*
- *Suggested Instructional Strategies*
- *Health Hotline of Agencies and Organizations* containing a list of agencies and organizations that provide nutrition education information and materials

TRAINING

An important aspect of any curriculum implementation is the training of those who will be involved as teachers and leaders of the nutrition education program. Due to increased public interest in nutrition, much of the media attention given to the subject has been misinformation or fallacy; therefore, it is imperative that those educators who use the *ESR IV: Nutrition Education* curriculum need to have accurate nutrition information. The following school personnel can be trained to use or train others to use the *ESR IV* nutrition education curriculum:

- school board members
- administrators (including athletic directors)
- faculty members (including all teachers and coaches)
- school nurses, counselors, and librarians
- school food service personnel

The training program for all school personnel should address the following issues:

- the importance of providing factual nutrition information based on scientific and clinical research

- the school's role in implementing nutrition education as a part of each child's basic education
- the effects of poor nutritional habits on school performance
- the role of school food service programs in the total nutrition education program
- the importance of community support and parental involvement

The teachers and instructional staff members responsible for instructing nutrition education should receive additional training in the following areas:

- basic nutrition principles
- nutrition education as an integral part of each child's basic education
- explanation of an integrated curriculum
- philosophical framework of *ESR IV* (Behavioral, emotional, intellectual, and physical growth depends on healthy dietary habits.)
- team teaching the nutrition education curriculum
- organization of the curriculum guide including the purpose of combining information, skills, and support
- specific instructions on how teachers can use the curriculum guide including illustrations of a variety of instructional techniques
- skills in lesson closure to reinforce the message that eating for good health must become a lifestyle habit
- descriptions of a variety of evaluation techniques for gauging the effectiveness of instruction

RED FLAGS

It is important that the teacher acknowledge the differences in individuals and their health needs to help reduce self-consciousness during the nutrition lessons. This communication reassures each student that he or she is a unique person; however, nutrition education specialists have identified some sensitive issues and actions that should be noted when teaching nutrition education. Issues or actions that should be avoided are called red flags and include:

Making comments about personal likes and dislikes in reference to foods
Children see teachers and other adults as role models and tend to copy their behavior. Set a good example for the students by making wise food choices.

Classifying foods as "good" or "bad"
Children will develop healthy attitudes about eating if they are taught that all foods can fit into a healthy diet when eaten in moderation. Eating can be a pleasurable experience for everyone.

Engaging in teacher self-disclosure
Teachers and students should not be encouraged to share personal stories relating to weight loss programs, fad diets, eating disorders, etc. Discussions should center around factual nutrition information and developing valuable life skills.

Discussing prescribed diets and personal food preferences
Children and adults consider their food habits to be very personal, and self-esteem can be easily damaged. Discussions of prescribed diets may encourage experimentation.

Making negative references to meals eaten in the school cafeteria
Mealtime is a significant part of every person's day. Allow children to view meals eaten at school as positive, social experiences.

Handling disciplinary problems during mealtime in the school cafeteria
It is important to remove the child to another location for disciplinary action. This will benefit the child causing the problems as well as the other children who develop anxiety from witnessing the disciplinary action. Anxiety during mealtime causes loss of appetite and stomach distress.

Making comments that reinforce the unrealistic societal demand for perfect people with perfect bodies as seen through the media
It is imperative that positive messages of respect and value for each individual's unique qualities and talent replace negative messages produced in television, film, radio, music, newspapers, and magazines.

Encouraging the use of vitamin and mineral supplements
Young people who are active in athletic programs are vulnerable to advertising promises that certain supplements and protein powders will improve athletic performance and increase stamina and strength. Physically active children and teens need to increase their intake of nutrients only slightly, and these needs can easily be met by the addition of several nutritious snacks during the day. Young athletes need a high carbohydrate diet which includes plenty of fruits,

vegetables, grains, and starches as well as adequate calories and fluids. Megadoses of vitamin and mineral supplements are potentially harmful and can cause serious side effects.

RECOMMENDATIONS FOR USING ESR IV

When planning the implementation of *ESR IV* for the classroom, the first step is to familiarize yourself with the philosophy pertaining to nutrition education in the curriculum guide and in district and campus-level plans.

The recommended procedure for using *ESR IV* is as follows:

- Obtain a copy of the "Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of each volume of *ESR IV*. **It is imperative that each teacher have a personal copy of the "Instructor's Resource Guide for Teaching Nutrition Education."** Many of the lessons depend on this resource as a teaching aid.
- Read through the introductory section to gain a broad understanding of Texas' overall effort to improve the nutritional health of Texas school children.
- Scan the sample lessons and resources to familiarize yourself with lesson content.
- Identify any personal weaknesses in preparation for teaching nutrition education and initiate plans to strengthen skills and knowledge in those areas.
- Develop a plan of implementation by consulting with teachers of all grade levels and building grade-level files. Such plans will contribute to the continuity of students' experiences from grade to grade.
- Plan your lessons. Based on the characteristics of your class, the materials available to you, and your personal judgment, select the lessons and activities you will teach.
- Understand that the lessons may have one or more activities which may take varying amounts of time. All activities on a sample lesson page do not need to be completed in one lesson period.
- Arrange for any additional materials needed to conduct the lessons.
- Teach nutrition education as an integral part of your regular class.
- Involve the school librarian in screening and selecting materials.

USING OTHER CURRICULAR MATERIALS

ESR IV is a nutrition education curriculum intended to supplement and enhance the total education of Texas school-age children. The nutrition information found in *ESR IV* is based on current health research. It is important that the nutrition facts presented to students throughout the curriculum be consistent and correct. Some criteria to consider when selecting additional nutrition education curricular materials include:

- Do the materials clearly supplement the existing curriculum? New curriculum materials should integrate easily into the overall academic program.
- Do the materials begin with early childhood and carry through to high school? In order to establish healthy eating habits and modify unhealthy current eating practices, nutrition education must begin early in a child's life and continue through all stages of the life cycle.
- Do the materials fit into the comprehensive health program? A comprehensive health program includes health education in the classroom, health services provided by the school nurse, and a healthy school environment.
- Are the materials culturally sensitive? Public schools serve students from diverse cultures. The variety of student backgrounds and traditions in the classroom must be considered.
- Are the materials founded on valid research? Consider using only materials and activities that are based on current nutrition research.
- Do the materials have current, state-of-the-art information? Out-of-date nutrition information resources and materials in the classroom and the library must not be used and should be removed.

EVALUATION

Evaluation is an essential part of any teaching and learning program. The educational process provides students with opportunities to master content, develop thinking skills, master skills needed to perform tasks, and change attitudes and behaviors based on new learning. In comparison, the evaluation process provides educators with opportunities to:

- confirm the hypotheses that served as the basis for the program plans
- examine strengths and weaknesses of the program
- draw conclusions based on the program's strengths and weaknesses
- analyze data that will substantiate future decisions concerning improvements to the program
- make decisions concerning recommended revisions

The ongoing evaluation process should occur at all levels from the classroom to the school campus, the school district, and the state agency. Evaluation involves asking critical questions that will supply the data necessary to determine the effectiveness of the learning. There are several steps involved in the evaluation process which include:

1) formulating clearly defined instructional objectives
2) gathering of evidence that acknowledges the achievement of the stated objectives
3) analyzing and interpreting the evidence
4) assessing the strengths and weaknesses of the students
5) proposing modifications and improvements to the total program

Evaluation of a program such as *ESR IV* may differ from the evaluation of other curriculums that involve mainly cognitive and psychomotor learning. The *ESR IV* goals "to improve the nutritional health of school age youth through nutrition education and to prepare them for a lifetime of healthy dietary habits" involve the affective outcomes of changed attitudes and behaviors. Significant emphasis must be placed on the role that values and attitudes play concerning food, food habits, health, and wellness. Evaluation methods such as anonymous self-reporting instruments and observation techniques may provide a truer assessment of changed behaviors and attitudes than written tests or other more traditional evaluation tools.

Key questions to be addressed in the evaluation of the *ESR IV: Nutrition Education* curriculum include:

- What percentage of the intended student audience is being reached?
- How effective is the program in meeting the identified goals and objectives?
- Is the program integrity maintained?
- What improvements could be made to ensure that students obtain the maximum benefit from the program?
- Are teachers integrating the lessons into the subject matter areas as designed?

Questions that assess changed student behaviors and attitudes include:

- Do students understand the relationship of good nutrition to health and wellness?
- Do students recognize that there are not "junk foods", but only "junk diets?"
- Have students developed skills to make wise food choices and to develop healthy dietary habits?
- Do students have a clear understanding of "making wise food choices?"
- Are students able to analyze their own personal eating habits?
- Can students relate how nutritional needs change throughout all stages of the life cycle?
- Do students have an increased awareness of cultural differences and cultural dietary practices?
- Have students learned to cope with stress from home, school, and work in ways other than binge eating?
- Can students explain why there is no "miracle food?"
- Are students able to discuss the relationship between a healthy self-image and their food choices?
- Do students realize that exercise and sufficient rest must be combined with nutritional dietary practices to improve the quality of life at any age?

Evaluation is a comprehensive, cooperative, and continuous process. It is comprehensive when all learning and all objectives are evaluated regardless of their level of difficulty. The cooperative process involves the combined efforts of teachers, administrators, and other personnel toward evaluation. This "cooperative spirit" allows for a true evaluation of the program's effectiveness. Finally, evaluation must be a continuous process because inevitable change and revision bring about the need for new evaluation. Continual evaluation and improvement of any program is the key to its success.

Modifying ESR IV for Special Populations

The nutritional health of school-age children of all races and socioeconomic levels is an ongoing concern for educators and health professionals. All students who are capable of learning and understanding should be taught the skills necessary to develop a lifestyle of healthy dietary habits. Nutrition education concepts, skills, and objectives should be mastered just as other educational concepts and objectives are mastered.

Special populations include students who:
- have handicaps
- have academic difficulty
- are bilingual
- possess limited English proficiency
- are from migrant families
- are gifted and talented

Despite their differences, these students have a common need for alternative approaches to instruction in the classroom because regular classroom teaching strategies are generally inadequate for them.

A major goal of any education program is to provide all students with opportunities to advance to the full extent of their abilities. The state-mandated curriculum now ensures a well-balanced single curriculum of instruction for all students regardless of special need or condition. Instruction for students with special needs includes the same essential elements as instruction given to general education students. Special program personnel and regular instructional personnel are jointly responsible for the cooperative yet modified delivery of effective instruction to students with special needs.

SPECIAL EDUCATION

Handicapped students may be able to fulfill the same curriculum requirements as their nonhandicapped peers; however, they may require modified content, testing methods, instructional methods, materials, pacing, and other attention regarding nutrition education.

Mainstreamed special education students may not have any background health information if they have not had classes such as health, physical education, and science which include essential elements related to health and nutrition. Class schedules of special education students and their Individual Education Plans (IEP) should be monitored to assure that these students are receiving adequate nutrition education.

Educators should be sensitive to the needs of handicapped students who rely on medicines and life support mechanisms. These students must not be made to feel that something is wrong with them because of their dependence on the medications or machines. Many handicapped students also have special dietary needs which should be recognized with care and sensitivity.

It is important to modify methods of presenting *ESR IV* materials to students with special needs. The teacher can select activities that make use of posters, charts, drawings, and flannelboard designs instead of teaching activities that require reading skills. Instruction can be delivered to hearing impaired students through sign language and to the severely visually handicapped through Braille. If students have handicaps that impair judgment, a direct instructional approach may be best.

Complex lessons with special vocabulary, complicated language patterns, or difficult illustrations should be avoided. Other possible modifications include:

- supply supportive instruction and reinforcement while using the same materials as for nonhandicapped students
- provide special instructional materials or media to reinforce concepts presented in nonhandicapped classes
- furnish adaptive methods to assess a student's knowledge of the subject area or essential elements in the standard courses
- summarize key points before starting an assignment
- match the content and delivery with the developmental level of the learner
- give instructions through several channels such as written and oral demonstration
- repeat instructions; provide more detailed directions
- change the pace of presentation
- ask leading questions as work progresses
- use progress charts and informal individual feedback interviews
- assign oral presentations, reports, and projects
- allow more time for assignments
- establish a buddy system within the classroom to provide assistance
- use peer tutors to assist handicapped students

- use group assignments
- use tape-recorded material so that students can listen and follow along in the written text; record instructions and assignments

COMPENSATORY EDUCATION

Compensatory instruction is targeted for students who are having academic difficulty in English language arts, mathematics, science, and social studies. Other students who may require remedial or compensatory instruction include migrant students, students whose primary language is not English, and prekindergarten or kindergarten children who have been identified as having developmental needs.

Compensatory instruction should extend and reinforce the regular program of instruction. Instruction in nutrition education for students in this category should be:

- based on each student's functional instructional level
- modified as necessary to accommodate methodologies, pacing, and materials
- designed to include the essential elements

Some students in this category may need assistance with a single concept or skill while others may be functioning significantly below the age or grade level of their peers and therefore require more attention. Teachers of students with special needs should:

- identify specific skill needs to ensure that instruction is directed toward specific skill and concept deficits
- identify specific learning modalities and styles
- identify alternate instructional strategies
- compare appropriateness of the material and activities with the student's reading and maturity level

Special remedial and compensatory alternatives are available such as tutorials, special teachers to provide additional time on task, reading improvement courses, locally developed study skills courses, coaching, summer school, and counseling. The regular teacher and any other teacher who provides remedial or compensatory instruction in addition to regular classroom instruction should plan and coordinate instructional activities using a team approach. Instructional personnel should also have training in teaching nutrition education. Regular instructional personnel and special personnel involved in the compensatory education program should work together to apply the same principles in nutrition instruction as in other teaching. To be effective, the educators will:

- determine each student's instructional level and identify specific skill needs
- jointly design and implement lesson plans
- adapt or modify instruction based on continuous assessment of student progress
- use small group instruction for students with the same skill needs
- limit independent activities to shorter periods of time
- ensure close monitoring of practice activities to prevent repetition of misunderstandings
- use concrete activities to teach skills and concepts
- use cross-age tutors, adult tutors, and peer tutors for one-on-one reinforcement
- arrange for adult coaches who can serve as mentors

BILINGUAL EDUCATION

To ensure that the goals of *ESR IV* are met for limited English proficient (LEP) students, administrators, and teachers must design a program equivalent to the program provided for native speakers. LEP students must have the opportunity to learn and use materials that develop expanded meanings of language, build vocabulary, and teach word recognition and comprehension techniques. To prevent feelings of isolation and low self-esteem that may result from a lack of proficiency in English, students should also be given frequent opportunities to participate in nutrition education activities provided at the school and in the community. These activities can lead the students to experience success and consequently improve their self-esteem and physical health and well-being.

Teachers who are certified as bilingual or English as a Second Language (ESL) instructors can team with personnel on emergency teaching permits to develop supplementary programs for LEP students. Parent volunteers and paraprofessionals can work with regular instructional personnel cooperatively to deliver the needed programs.

While modification of the instructional program involves changing the language in which the content is conveyed, the scope of the curriculum should remain the same. In an ESL program, the sequence in which the essential elements are presented can be modified to accommodate students' progress in acquiring English language skills. Emphasis on oral and visual stimuli aids students in grasping the concepts that English-speaking students develop by writing.

More specifically, the teacher can help students build card files and glossaries on nutrition vocabulary, present the same information through a variety of different charts and visuals, encourage students to underline key words or important facts in their written assignments, and encourage categorizing of nutrition words and information into meaningful groups. Teachers can also pair students for team learning.

In an ESL program, pacing modifications should be based on vocabulary concept development while in a bilingual program, dual language instruction enables teachers to use a process approach to the content area. Additionally, teachers can explain special vocabulary terms in the students' native language; write instructions using short, simple sentences; limit the number of problems that must be worked; record activities for independent listening assignments; de-emphasize speed and emphasize accuracy of work; ask open-ended questions to allow practice in thinking and speaking; and assign homework tasks that require a short reading time. Teachers also need to remember that the students' parents or families may not speak English or have few materials at home to support learning activities.

It is important that student materials, whether they are state-adopted textbooks in Spanish, teacher-made lessons, or district-developed aids to instruction, be modified to meet the students' academic needs. The teacher can modify student materials and activities by:

- providing pictures to illustrate new words
- offering a variety of reference materials at the students' instructional levels for independent work
- using a variety of activities from lower grade levels such as games to be played by pairs of student or small groups
- maintaining a library of supplementary books and workbooks written in simple English
- using diagrams and drawings to identify concepts and relationships
- providing films, records, filmstrips, and videotapes to be used independently or in small groups

MIGRANT STUDENTS

Effective teaching of migrant students is a challenge for many districts and individual schools. Thorough, careful analysis and diagnosis are needed to determine if migrant needs are due to lack of experience, lack of time on task, or need for remediation. An accurate assessment is essential in order to adapt the content of the curriculum, methods of instruction, and the direction of nutrition education to meet migrant students' needs.

Migrant students are often limited in English proficiency, require compensatory and remedial assistance, or need enrichment activities to be challenged adequately. Sometimes, these students also attend school part-time, from six to seven months, or they may attend school for the full year. In either situation, gaps in their education are usually apparent.

Teachers can extract vital educational information concerning individual migrant students from the Migrant Student Record Transfer System (MSRTS) which reports credits earned in courses and partial work completed. If migrant counselors are available, they can assist teachers in planning instructional programs for migrant students. Continuity of instruction and provision of intensive remediation are two important ways in which teachers can provide an opportunity for migrant students to learn the essential elements. School districts can share information by using a checklist indicating which essential elements have been taught, which need to be reinforced, and which require further instruction.

The following list suggests ways that teachers can modify *ESR IV* for migrant students:

- Assess the students' instructional levels through informal testing.
- Select and highlight the most important activities that help explain and give vocabulary to the essential elements.
- Prepare brief outlines of units to be studied and highlight important topics related to nutrition education.
- Build independent units for elementary students that can be rearranged as needed to cover areas that the students have not been taught.
- Establish a buddy system for recording and reporting data and for completing assignments.
- Provide migrant students with oral tests and/or tape-recorded lessons when appropriate.

- Use a group language experience approach for oral language development.
- Allow the students to bring their own culture into the classroom by incorporating it into the content of the course.
- Capitalize on students' experiences of travel, work, and different family structures.
- Provide mentors for gifted migrant students who show ability and interest in a certain field, especially in nutrition and health-related careers.
- Assign homework and course projects that are relevant to the migrant student.
- Allow opportunities for independent work that can be completed through prepared independent units of study.
- Use tutors to supplement instruction; keep student/teacher, aide, or peer ratio low.
- Establish extra classes in the evening, on weekends, and during the summer.
- Provide computer-assisted instruction for remedial and enrichment purposes.
- Assess facets of the students' migrant experience that can help them grasp and master certain essential elements.
- Modify textbook and other reading passages to an appropriate reading level.
- Make use of high-interest, low-reading level materials.

Educators may also use suggestions from the Compensatory Education, Bilingual Education, and Gifted and Talented Education sections of this curriculum guide to plan an effective instructional program for migrant students.

GIFTED AND TALENTED STUDENTS

An understanding of the needs and characteristics of gifted and talented students is the first step in adapting the *ESR IV* curriculum guide for these students. Programs for gifted students modify or differentiate the curriculum used in the standard classroom regardless of content area. This does not imply that the curriculum is different, but rather that it accelerates, expands, or enriches the regular curriculum to suit the needs of the gifted learner. This is in keeping with Title 19, Chapter 75 of the Texas Administrative Code, which suggests that districts use these techniques when modifying the curriculum for gifted students.

Differentiation of the curriculum takes place in three areas. A differentiated curriculum contains in-depth content studies which are joined with sophisticated process skill development to result in sophisticated product development.

Differentiation of the nutrition education curriculum can be effective in every subject or course area and at all grade levels. Gifted students should first be involved at the knowledge level. The importance of establishing a lifetime of healthy dietary habits can be taught through direct instruction and through films, books, pamphlets, periodicals, and resource individuals. At the appropriate time, administrators and teachers can accelerate, expand, and enrich the program by including activities that encourage students to:

- apply critical thinking and analysis skills to writing questions related to nutrition for a unit of study using Bloom's taxonomy
- sharpen creative thinking and communication skills by creating plays, poems, ads, slogans, posters, stories, and books for nutrition education strategies and activities
- apply knowledge of nutrition education by preparing brainteasers and puzzles to be used in a puzzle book for other students
- plan and present an assembly about nutrition using songs, skits, poems, and choral readings that they have developed
- increase research skills by having students choose a topic related to nutrition, state a thesis, conduct research, and then present findings in the form of a creative display or product
- develop leadership skills by planning and producing a nutrition education campaign or assembly for preschool or elementary children
- develop an independent study project focusing on a topic related to nutrition

Other modified or differentiated activities for gifted students can include:

- designing and setting up a learning center related to nutrition education
- planning, scheduling, and providing follow-up activities for an in-class presentation by a dietitian, nutrition education specialist, nurse, or other resource persons
- publishing a school newsletter on the value of good nutrition

MULTICULTURAL SENSITIVITY

Without a doubt, Texans live in a culturally diverse society. Multicultural education can help prepare young people to be sensitive to multicultural attitudes, beliefs, and interests that are present at home, school, and in the community. Therefore, it is important that all educators in the state, and particularly those involved in nutrition education, need to be sensitive to the precepts of multicultural education.

Through formal and informal multicultural approaches, nutrition educators can develop and promote the kind of multicultural sensitivity that needs to become an integral part of every teacher's repertoire of skills. The basis for this approach is provided by the State Board of Education rules. Title 19, Part II of the Texas Administrative Code of Statutory Citations, Chapter 97, Subchapter B, Principal V (97-25), Standard 3 states, "The district's curriculum is adapted appropriately to meet the needs of all students, including those in special education and special populations."

In addition to rules that point toward multicultural education and sensitivity, an important humane consideration is obvious. We can better reach students when we teach the whole child and to teach the whole child, we need to understand, accept, and incorporate cultural differences into the classroom setting.

Students of many cultures in large urban school districts and smaller rural schools throughout Texas will respond well to teaching techniques that give consideration to their differences in backgrounds and experiences. This approach is especially appropriate in nutrition education because food availability as well as cultural food traditions vary greatly from student to student.

Inservice and training are useful in increasing teacher awareness and sensitivity, but simply being cognizant of one's classroom and school environment can do a great deal to promote understanding of multicultural issues.

The following are a few specific strategies and suggestions that encourage multicultural sensitivity:*

- Realize that students are influenced greatly by personal relationships and praise or disapproval.
- Teach to oral language strengths in both speaking and listening.
- Utilize many students' desire to work cooperatively.
- Provide whole group and tutorial instruction.

- Be a willing learner, a student of their culture.
- Form individual relationships with students. Learn to spell and pronounce their names correctly.
- Realize that once you have been accepted, you will become an active role model.
- Do everything possible to enhance self-concept.
- Expect your students to succeed; believe they are capable of achievement.
- Do not think of multicultural education as remedial or compensatory.
- Do not make learning competitive.
- Evaluate holistically in terms of individual growth.

*These and other strategies are listed in "Toward a Rationale for a Supervisory Model of Instruction in Multi-Cultural Student Populations or Sweathogs Won't Bite" by Catherine A. Baker. (ERIC Document No. 246005)

Instructor's Resource Guide for Teaching Nutrition Education

The main goal of nutrition education is to provide students with the knowledge and skills needed to make wise food choices throughout their lifetimes. In order to accomplish this, nutrition education must include the cognitive, affective, and psychomotor domains of learning. Positive change in dietary habits and in the ability to make wise food choices can be accomplished when students are given opportunities that enable them to:

- Recall and relate basic nutrition information. (Cognitive)
- Choose to adopt this information to their own personal value system. (Affective)
- Develop and practice skills that are needed to accomplish nutrition education goals. (Psychomotor)

BASIC NUTRITION PRINCIPLES

Nutrition is the foundation for good health and results in the effect of food on the body. The statement, "You are what you eat," is certainly true from the standpoint of nutrition and good health. The study of nutrition is a science that involves the relationship of growth, development, and overall health to the intake of nutrients. People need to have basic knowledge of nutrition so they can separate fact from fallacy in health and nutrition claims.

Implications of Food: Physiological, Psychological, Social

The past decade has seen Americans take a sincere interest and dedication to improved individual health and wellness. Consumers are concerned with the latest scientific findings on health issues and nutrition-related topics.

Physiological Implications.

Improved nutritional knowledge and a better understanding of the relationship of nutrition to health and prevention of disease has had a significant impact on the increased human life span in the past 100 years. One hundred years ago, the average human life span was 40 years. Today, the average American has a life expectancy of 75 years.

Food is the way in which the body obtains nourishment. The nutrients that the body gets from food not only enable the body to work, but also supply it with building blocks for growth and development of bones and tissue, supply energy for work and play, and provide other nutrients that enable the body to perform all of its important functions.

Besides the nutritional importance of eating, there are other physiological factors involved. The four senses that influence the appetite and the satisfaction gained from eating are sight, smell, taste and touch. These factors are directly related to the feelings of hunger and satiety that occur before and after eating.

Psychological Implications.

Along with the body's demanding need for nourishment, food has other roles as well. For most people, food has an emotional value that is influenced by intrinsic and extrinsic factors.

In infancy, food fulfills the need for affection, comfort, and security. For all humans, food fulfills the need for security and relieves the tensions and anxieties brought on by hunger. Many people use food in an attempt to satisfy their feelings of anxiety, boredom, or loneliness. All of these factors are intrinsic factors that occur in response to emotions. There are also many extrinsic, or external, factors that psychologically influence food habits. Advertising, movie theaters, spectator sports, and television programming send signals to people to eat. Thus, certain food habits are established as a result of these influences. People are also influenced by the food choices made by family and friends. Food is often used to boost self-esteem in the presence of others, or as a means to feel included with a certain group.

Social Implications.

Foods, as well as eating patterns, have many social implications. Not only do people associate food and mealtime with social gatherings of family and friends, but they also associate certain foods, occasions, locations, and people with eating. Many people have childhood recollections of going to a family member's home, such as grandparent's, for a special meal. Likewise, other people associate food with times of celebration and crisis. In cultures all over the world, people prepare and serve food as part of most social gatherings.

It is important that nutrition educators consider all of these factors when helping children and adolescents acquire good dietary habits that will carry over into their adult lives.

The Nutrients

Nutrients are life-sustaining chemical substances that nourish and promote the growth of the human body. No one food contains all of the nutrients necessary for the body to function effectively; therefore, a balanced diet that incorporates appropriate amounts of the six essential nutrients, as well as recommended servings from the food groups, is necessary. Individuals should choose foods of high nutrient density rather than foods with empty calories. Foods that are nutrient dense are foods that are excellent sources of essential nutrients with few, if any, empty calories. ***Empty calorie foods*** refer to foods that provide calories or energy but little or no nutritive value. The six essential nutrients are:

- protein
- carbohydrates
- vitamins
- minerals
- fats
- water

The ***RDA*** is the Recommended Dietary Allowances for Americans. The RDA serves as a guideline for determining the amounts of nutrients a specific person needs each day. It gives the specific recommended daily nutrient needs for a person according to age and gender. The RDA is established by the National Food and Nutrition Board of the National Academy of Sciences. The ***U.S. RDA*** are the Recommended Daily Allowances developed by the Food and Drug Administration for use on food labels. The U.S. RDA is a standard that everyone can use to approximate daily nutrient needs.

Protein.

Protein is the main component of every cell in the human body. Without protein, the human body would not be able to survive. Protein performs three very important functions. The body uses protein for:

- Growth and repair of new and damaged tissues.
- Regulating all body functions, and transporting other nutrients and oxygen throughout the body.
- Supplying energy when adequate amounts are not supplied by carbohydrates and fats.

Protein is comprised of compounds called amino acids. Amino acids are often referred to as the building blocks of protein. There are 22 different amino acids. Thirteen of these amino acids are manufactured in the body, and the remaining nine amino acids must be supplied by the diet. These nine amino acids are often referred to as essential amino acids because it is essential that they be furnished by the diet. The body cannot function without these nine essential amino acids. People in less developed countries suffer from many diet-related diseases and other health problems because of the shortage of protein foods.

Protein foods that supply all nine of the essential amino acids are called ***complete proteins***. Foods that supply only some of the nine essential amino acids are called ***incomplete proteins***. Two incomplete protein foods can be eaten together to form a complete protein source. Most generally, animal proteins are complete protein sources and plant proteins are incomplete protein sources. However, animal proteins also provide more fat and calories than plant proteins. It is a wise dietary practice to consume combinations of plant proteins to fulfill some of the body's need for complete proteins. Some examples of combining incomplete proteins to form complete proteins are:

- Legumes (dried beans, lentils, split peas) and rice
- Pinto beans and corn tortillas
- Peanut butter sandwich (Peanuts are a legume.)

Baked Beans

Another way to form complete proteins is to combine a small amount of animal protein with an incomplete protein source. Some examples include:

- Bean soup with small amounts of chopped ham
- Macaroni and cheese
- Cereal and low-fat or skim milk
- Baked potato with cottage cheese
- Spaghetti with tomato sauce and a small amount of meat

The average American adult eats twice as much protein as is needed. It is recommended that 10-15% of calories come from protein for most children and adults. Protein needs increase during times of growth, such as childhood, adolescence, pregnancy, and lactation. People should consult the Recommended Dietary Allowances (RDA) for gender and age group guidelines for protein requirements.

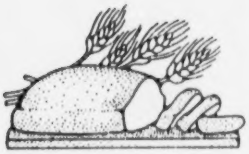
Carbohydrates.

Carbohydrates are nutrients that supply energy for body functions. The other energy sources are proteins and fats. Fifty to fifty-five percent of calories should come from complex carbohydrates. Carbohydrates are broken down in the body into sugars, starches, and fiber. The sugars are known as simple carbohydrates, and the starches and fibers are known as complex carbohydrates. Carbohydrates perform three important functions in the body. The body uses carbohydrates to:

- supply energy
- supply fiber
- aid in the digestion of fats

- ***Monosaccharides*** are the simplest form of carbohydrates. The monosaccharides are glucose, galactose, and fructose. Sugars and starches are broken down in the body into the simple sugar glucose. ***Glucose*** is the major sugar found in the bloodstream and supplies energy for the body. Some body tissues, such as red blood cells and parts of the brain, are able to get energy only from glucose. ***Fructose*** is found in honey and fruits and is known as the sweetest of the sugars. ***Galactose*** is not found in nature, but is one of the two monosaccharides available after the breakdown of lactose (milk sugar).

- ***Disaccharides*** are formed when two glucose molecules are joined together. They are broken down into monosaccharides during digestion. The disaccharides are sucrose, maltose, and lactose. ***Sucrose*** is found in white refined table sugar, brown sugar, confectioner's sugar, cane sugar, beet sugar, molasses, and maple syrup. ***Maltose*** is malt sugar which is found in sprouting cereal grains. ***Lactose*** is milk sugar and is found only in milk.



- ***Polysaccharides*** are the complex carbohydrates. They include starch, cellulose, and glycogen. ***Starch*** is the most abundant polysaccharide. Starch can be found in roots, legumes, grains, and vegetables, but must be broken down into glucose by the body before it can be utilized. ***Cellulose*** is the fibrous material found in plants and is commonly referred to as fiber or roughage. Cellulose cannot be digested by humans. Sources of cellulose include vegetables, fruits, and whole grain cereals. Glycogen, also known as animal starch, is the storage form of carbohydrates found in the liver and muscles. Glycogen in the liver is easily broken down into blood glucose, and muscle glycogen supplies glucose for muscle use. This is especially important during periods of intense exercise.

Vitamins.

Vitamins are organic compounds necessary for normal growth, maintenance of health, and reproduction. Vitamins help the body convert carbohydrates and fat into energy and assist in the formation of bones and tissues. Vitamins are essential for maintaining good health as the body cannot survive without them.

Vitamins are either fat soluble or water soluble. ***Fat-soluble vitamins*** cannot be dissolved in water, so they are stored in body fat until they are transported to the cells by the blood. ***Water-soluble vitamins*** are easily dissolved by water and therefore are not stored in the body. Water-soluble vitamins must be replenished daily.

Vitamins A, D, E, and K are the fat-soluble vitamins. The functions and sources of each of the fat-soluble vitamins include the following :

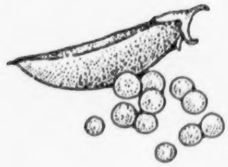
- ***Vitamin A*** (retinol) is responsible for night and color vision, growth of bones and teeth, and production of healthy skin. Sources of vitamin A include dark green and dark yellow vegetables, fruits, egg yolks, whole milk, liver, butter, and fish oils.

- ***Vitamin D*** (calciferol) is important for the normal growth and development of bones and teeth , and it aids in the absorption and utilization of calcium and phosphorus. Sources include egg yolks, liver, fish liver oils, and fortified milk. The primary source of vitamin D is the sun. However, excessive exposure to the sun puts a person at risk for certain types of skin cancer.

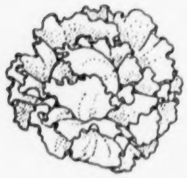
- ***Vitamin E*** (alpha tocopherol) protects cells from oxidation. ***Oxidation*** is a chemical change that occurs as a result of exposure to oxygen. When blood cells or tissue cells are exposed to oxygen, the resulting chemical change known as oxidation causes a weakening of the cells walls and thus damages the tissues. Vitamin E is most effective in protecting the red blood cells in the lungs and the cells in the lung tissue because of their continuous exposure to oxygen. Oxidation also occurs when foods are exposed to oxygen and results in a loss of vitamins, as well as food spoilage. Sources of vitamin E include vegetable oils, wheat germ, whole-grain bread and cereal products, liver, fish liver oils, and green leafy vegetables.

- ***Vitamin K*** (phylloquinone and menaquinone) is necessary for blood clotting. Sources include green leafy vegetables, broccoli, peas, liver, cheese, and eggs.

The water-soluble vitamins include the eight B vitamins and vitamin C. The functions of each of the water-soluble vitamins and sources of each include:



- ***Thiamin*** (vitamin B_1) helps break down carbohydrates in the body and helps the body release energy from food. It is necessary for cell respiration, promotion of normal appetite and digestion, and maintenance of a healthy nervous system. Sources include enriched whole-grain products, liver, peas, and pork. Thiamin is heat sensitive and is easily leached into the cooking liquid. Proper food storage and preparation practices are essential to maintain the thiamin level in foods.



- ***Riboflavin*** (vitamin B_2) is necessary for the body to break down carbohydrates and keep the skin, tongue, and lips in normal condition. Sources include cheese, eggs, enriched breads, leafy green vegetables, lean meats, and legumes. Riboflavin is easily destroyed by exposure to light, especially sunlight. It is important to store these foods either in a pantry or in the refrigerator to prevent nutrient loss.

- ***Niacin*** (vitamin B_3) is vital to the nervous system. It helps cells convert food to energy and is beneficial for the mouth, skin, and tongue. It helps the digestive tract to function properly. Sources include liver, lean meats, whole grains, nuts, and legumes. Currently, there is research into the effects of niacin in lowering blood cholesterol. However, due to the toxic side effects of high doses of niacin, self-prescribed niacin supplements are not recommended.

- ***Folate*** (also called folacin or folic acid) is necessary for the body to produce normal red blood cells and for the biochemical reactions of cells in the production of energy. Sources include wheat germ, wheat bran, yeast, leafy green vegetables, liver, and legumes.

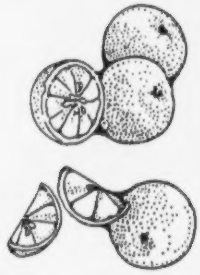
- ***Biotin*** is essential in the breakdown of carbohydrates, lipids, and proteins in the body. Sources include liver, kidneys, egg yolk, vegetables, and fruits (especially bananas, grapefruit, watermelon, and strawberries.)

- ***Pantothenic Acid*** aids in the metabolism of fat and the formation of cholesterol and hormones. Sources include all plant and animal tissues with the best sources being liverwurst, meats, poultry, egg yolk, wheat germ and rice germ, tomato paste, sweet potatoes, oatmeal, and milk.

- ***Pyridoxine*** (vitamin B_6) is needed to help nervous tissues function normally, to maintain the health of the skin and red blood cells, and to participate in the metabolism of proteins, carbohydrates, and fats. Sources include liver, lean meats, cereals, vegetables, and milk.

- ***Cyanocobalamin*** (vitamin $_{B12)}$ is necessary in the development of normal growth, normal functioning of all body cells, metabolism of folate, and protection against pernicious anemia. Pernicious anemia primarily results from the body's inability to absorb vitamin B_{12}. However, it can result from a deficiency of vitamin B_{12} in the diet. Vitamin B_{12} is found only in animal protein. Liver, clams, oysters, muscle meats, eggs, chicken, and milk are the best sources.

- ***Ascorbic Acid*** (vitamin C) aids in the formation of hemoglobin, helps fight infection, aids in healing of wounds, aids in the formation and maintenance of collagen, and aids in the absorption of iron and calcium. Sources include citrus fruits, cantaloupe, strawberries, dark leafy green vegetables, broccoli, cabbage, and green peppers.



Research continues into the role vitamins and minerals play in preventing chronic disease and in maintaining health and wellness. The ***Recommended Dietary Allowances (RDA)***, developed by the National Academy of Sciences, serves as a guideline for determining the amounts of nutrients a specific person needs each day. The RDA is found in Appendix D of the *ESR IV* curriculum guide.

Minerals.

Minerals are necessary for building bones, tissues, and other compounds, as well as for regulating body processes. Minerals found in large amounts in the body are called ***macrominerals***. Macrominerals include calcium, phosphorus, magnesium, sodium, potassium, and chloride. Minerals found in small amounts in the body are called trace elements or ***microminerals***. Trace elements are iron, iodine, zinc, and fluorine. Figure 1 lists macrominerals, their primary functions, and sources. Figure 2 lists primary functions and sources of microminerals.

MACROMINERALS

Macrominerals	*Functions*	*Sources*
Calcium	• Needed for bone rigidity, blood clotting, muscle contraction, normal nerve functions • Just because an individual eats food containing calcium does not mean that the body absorbs the calcium. Factors that increase calcium absorption include: - an overall balanced diet - intake of vitamins D and C - intake of certain amino acids • Factors that decrease calcium absorption include: - a vitamin D deficiency - fat malabsorption - eating large amounts of fiber - lack of exercise - stress - lactose deficiency or lactose intolerance	Milk and milk products, soft-boned fish, calcium-fortified orange juice, leafy green vegetables, and broccoli.
Phosphorus	• Helps build strong bones and teeth, and is a significant factor in all phases of calcium metabolism	Meat, poultry, liver, fish, eggs, milk, other dairy products, raw oranges, cherries, peaches, rice, potatoes, and wheat flour. Eating foods high in calcium will provide adequate phosphorus.
Magnesium	• Helps regulate - body temperature - muscle contractions - the nervous system • Helps cells utilize - carbohydrates - fats - proteins	Green leafy vegetables; nuts, including Brazil, almonds, and cashews; muscle meats; salmon; cheddar cheese; beef liver; milk; and eggs. Vitamin D increases the body's absorption of magnesium.
Sodium, chloride, potassium	• These three work together to: - regulate the flow of fluids in the body - help regulate the nervous system - help regulate the muscle functions,including heart - help regulate nutrient absorption in the cells	Sources for sodium and chloride are found in table salt, while potassium can be found in meats, milk, bananas, leafy green vegetables, and citrus fruits.

Figure 1

MICROMINERALS

Microminerals	*Functions*	*Sources*
Iron	• Found primarily in the blood, where it combines with protein to form hemoglobin (oxygen-carrying protein in the blood.)	Liver and other organ meats, egg yolks, dried legumes, shellfish, leafy green vegetables, and enriched breads. It is estimated that only 10 to 15 percent of the iron in foods is actually absorbed.
Zinc	• Zinc is needed for the lungs to release oxygen.	Oysters, herring, egg yolks, and organ meats.
Copper	• Copper is necessary in the formation of hemoglobin.	Liver, bran flakes, and cocoa powder.
Manganese	• The role of manganese is not well-understood.	Nuts, rice, whole grains, beans, and leafy green vegetables.
Selenium	• Selenium works in conjunction with vitamin E to protect cells from destruction. It has been suggested that selenium may have a role in the prevention of cancer.	Fish, organ meats, shellfish, and eggs. Grains and other plants, grown in selenium-rich soil are also good sources.
Chromium	• Chromium maintains the normal glucose uptake into cells and helps insulin bind to cells.	Vegetable oils, egg yolks, whole grains, and meats. Fruits, vegetables, highly processed foods, and drinking water are generally poor sources of chromium.
Iodine	• Iodine is needed for the thyroid gland to produce thyroxine, which is essential for the oxidation rates of cells.	Iodized salt, ocean fish, seaweed, and milk.
Fluoride	• Fluoride is needed to prevent tooth decay.	Fluoridated drinking water, seafood, tea, fluoridated toothpaste, and fruits and vegetables grown in areas where natural fluoride level in the water is high.

Figure 2

Fats.

Fats are semisolid, energy-filled organic compounds found in animal and plant tissues. The term ***lipids*** is often used interchangeably with the term fat to describe fats, oils, and fat-related substances. Lipids in the simplest forms are called fatty acids. The major form of fat in the body and in foods is known as triglycerides. ***Triglycerides*** are chemical compounds that contain carbon, hydrogen, and oxygen. Fats or lipids are important sources of energy needed by the body. Calories from fat should not exceed 30% of the total daily calorie intake. Functions of fat in the body include:

- provide energy
- transport and absorb fat-soluble vitamins
- cushion vital organs in the body
- comprise part of the structure of body cells
- supply essential fatty acids
- add flavor to foods
- satisfy appetites by delaying hunger
- insulate the body
- serve as protection for nerves and blood vessels

Fats are classified as saturated, monounsaturated, or polyunsaturated. The more saturated the fat, the more solid it is at room temperature.

- ***Saturated fats*** have the most hydrogen. Saturated fats are found in butter, chocolate, egg yolks, lard, shortening, and many other foods. Saturated fats should not exceed 10% of the total calories from fat.
- ***Monounsaturated fats*** have less hydrogen than saturated fats. Some examples of monounsaturated fats include some cooking oils, olive oil, some peanut butter, and some salad dressings.
- ***Polyunsaturated fats*** have the least amount of hydrogen. Polyunsaturated fats are found in such foods as Brazil nuts, some cooking oils, some peanut butter, soft margarine, and walnuts.

Water.

Water is necessary in the body for many reasons. It acts as a solvent for nutrients and hormones. Water also transports nutrients to the cells and rids the body of waste products. It lubricates the joints, facilitates food passage, and regulates body temperature through conduction of heat, perspiration, and excretion. The body typically uses two to two and one-half liters of water per day. It is recommended that the daily diet include at least eight 8-ounce glasses of water per day. Sources of water include beverages, soups, water, and milk. Other sources are:

• vegetables	87 percent
• fresh fruits	86 percent
• eggs	74 percent
• beef	60 percent
• bread	36 percent

Functions of Dietary Fiber

Fiber has been one of the new *health words* since the early 60s. However, very few people really understand the role fiber plays in nutrition and health. Fiber comes from the contents of plants that the human body cannot digest.

There are many types of fiber. Fiber is classified into two categories: soluble and insoluble. Soluble fiber is dissolved in water and may help control diabetes and lower blood cholesterol levels in some people. Soluble fiber is found in some fruits, beans, and oat bran. Insoluble fiber is not able to be dissolved in water and therefore has different functions from soluble fiber. Insoluble fiber helps move food through the digestive tract. It aids in the prevention of colon and rectal cancer, helps to control diverticulosis, and helps prevent constipation. Diverticulosis is caused when bulging pockets form on the intestinal wall and can become inflamed. Sources of insoluble fiber are fruits, vegetables, wheat bran, whole wheat, and some beans.

Fiber has many functions in the body. Some of these functions that help prevent medical problems include:

- Keeps contents of the intestines moving and prevents constipation.
- Helps reduce the risk of colon cancer by allowing food to pass quickly through the digestive tract. This limits susceptibility to agents in food that might cause cancer.
- Stimulates muscles of the digestive track. Well-toned digestive track muscles aid in prevention of diverticulosis and hemorrhoids.
- Absorbs water and gives a feeling of fullness. This helps people feel full longer, contributing to healthy eating and weight control.

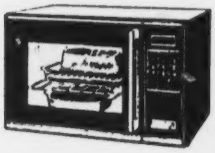
The United States Departments of Agriculture and Health and Human Services have adopted a set of seven guidelines that can help Americans choose a healthy diet. These guidelines address some of the problems with the diets of many Americans. The guidelines are found in Appendix F.

Retaining Nutrients in Food

While learning which nutritious foods to choose at the supermarket, it is important to learn how to store and prepare those foods so that most of the nutrients are retained. Several factors should be considered when storing and preparing foods to promote nutrient retention and to prevent nutrient loss.

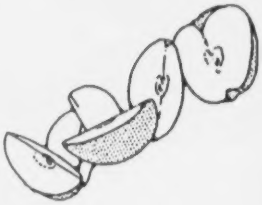
Many people assume they are getting all the nutritional value of a food just by eating it. What they do not stop to consider is that quality, storage, and preparation techniques all influence the amount of nutrients that are retained in food.

Many foods in our culture are considered highly palatable when eaten in their raw form. ***Palatable*** refers to the acceptability of the food to the palate, or taste. Foods that appeal to a person's sense of taste, smell, and sight, as well as foods with the appropriate temperature and texture, are considered palatable. Fruits and vegetables are the foods most commonly eaten in raw form. This is especially important when considering the nutrients that are not lost through cooking. In many cases, however, cooking improves the palatability, flavor, color, texture, and digestibility of food. Cooking also destroys organisms and bacteria that could cause food-borne illnesses.



Consumers can take precautions to preserve the nutrients in the foods they prepare by following some food preparation practices. Microwave cooking, steaming, and stir-frying are methods that improve nutrient retention in foods. Simmering foods in a small amount of liquid for a minimal amount of time also helps to improve nutrient retention. Some additional suggestions for preserving the nutrient content of foods prepared at home include:

- Avoid overcooking. Prolonged exposure to heat causes loss of some vitamins.
- Cover refrigerated foods with tight-fitting lids, foil, or plastic wrap.
- Cut fruits and vegetables in large pieces. Chop immediately before use to avoid unnecessary exposure to oxygen.
- Freeze or refrigerate leftovers immediately after use. Leaving foods exposed to room temperature increases nutrient loss, promotes an environment for bacteria to grow, and increases rate of spoilage.
- Include raw fruits and vegetables in menu planning and food preparation.
- Refrigerate most products to reduce nutrient loss.
- Rinse foods in cold water. Do not soak. This causes loss of valuable water-soluble nutrients.
- Thaw frozen foods in the refrigerator. More nutrients are retained at cooler temperatures, and this also inhibits the growth of organisms that can cause food-borne illness.



Food Safety

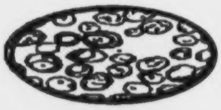
Food safety is a topic of interest and concern for professionals in the food industry as well as for consumers. Consumers need to be informed about food safety practices in the home. The Food and Drug Administration continually monitors the food supply to ensure its safety.

At least one million people in the United States suffer from food-borne illnesses each year. The hazards of food-borne illness can be avoided by sanitary food handling and effective food preparation techniques. To reduce the effects of contamination, the growth of microorganisms must be slowed by refrigeration or destroyed by heat. ***Microorganisms*** are tiny living cells that can be seen only with a microscope. Microorganisms are everywhere–in the body, in the soil, in the water, and in the air.

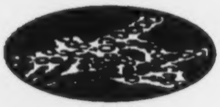
Microbiological hazards account for the most cases of food-borne illness. The four types of microorganisms that affect food are bacteria, viruses, yeasts, and molds. Food-borne illnesses caused by microbiological hazards are classified as either infections or intoxications. A ***food-borne infection*** is a disease caused by eating food containing harmful microorganisms. A ***food-borne intoxication*** is an illness caused by poisons or toxins in the food a person eats. The toxin may occur naturally in the food, as in certain mushrooms, or the food may be contaminated by toxins produced by certain microorganisms.

Bacteria

Viruses



Yeasts



Molds

Bacteria are small, single-cell organisms that can live anywhere people can. They thrive in a warm, moist environment that is neutral or slightly acidic. Bacteria are more commonly involved in cases of food-borne illness than are viruses, yeasts, and molds. Common names of some food-borne illnesses of bacterial origin are staph, botulism, perfringens poisoning, salmonellosis, and listeriosis. The bacteria that cause the illnesses are *Staphylococcus aureus, Clostridium botulinum, Clostridium perfringens, Salmonella, and Listeria monocytogenes.*

Viruses are the smallest and perhaps the simplest form of life known. They cause illnesses such as colds, influenza, and infectious hepatitis. Viruses do not increase in number while they are in the food. The food merely transports the viruses, which may then lodge themselves in the human host and produce abundantly.

Yeasts are fungi that require sugar, proper temperature, and moisture for growth. Yeasts often consume these ingredients in food products and spoil the food in the process. Yeast organisms can be killed by heating to 136°F (56°C) for about fifteen minutes. Yeast spoilage can create a slime on fruit juices or pickle brine (the solution in which pickles are preserved) or a pink discoloration in cottage cheese. However, no evidence suggests that yeast-producing diseases in humans are transmitted by food or that yeasts occurring naturally in foods are harmful to humans.

Molds are furry-looking fungi that can grow on almost any food at almost any storage temperature, under almost any conditions–moist or dry, acidic or nonacidic, salty, or sweet. The color of mold is usually white but also can be blue-green, orange, black, gray, or even red. Soft food items such as yogurt, sour cream, cheese slices, jams and jellies, tomatoes, and cucumbers with mold spots should be discarded. Figure 3 lists food safety guidelines that help people avoid food-borne illness.

FOOD SAFETY GUIDELINES— AVOIDING FOOD-BORNE ILLNESSES

- Refrigerate or freeze leftovers immediately after use.
- Thaw frozen foods in the refrigerator, never on the counter. The warm temperature is a perfect environment for microorganisms to thrive.
- Keep hot foods hot, and cold foods cold. Lukewarm temperatures allow bacteria to grow.
- Use a meat thermometer when cooking meat and poultry. Insert the thermometer in the thickest part of the meat away from the bone. For poultry, the internal temperature should reach 180° to 185°F.
- Use a different cutting board and different utensils for preparing fruits and vegetables than is used to prepare raw meat and poultry.
- Carefully wash all utensils used to prepare raw meat and poultry in hot, soapy water.
- Wood cutting boards can be thoroughly cleaned in a bleach and water solution. The bleach will kill any bacteria left on the cutting board.

Figure 3

SELECTING A BALANCED DIET

Nutrition education is valuable only if children and adults make healthy food choices a part of their daily lives. This new nutrition knowledge is only worthwhile if it is put into practice everyday. The USDA's "Pattern for Daily Food Choices" illustrates the food guide presented in the "Dietary Guidelines for Americans" found in Appendix F. The "Pattern for Daily Food Choices" helps consumers use the guidelines by suggesting the number of servings to choose from each food group daily. It is found in Appendix C.

Self-Responsibility for Health and Wellness

Most people, regardless of age, ultimately have control over what they actually eat. Therefore, each person assumes the responsibility for the food choices he or she makes. Thus, the *ESR IV* objective, "Make wise food choices as part of self-responsibility for health and wellness," is applicable to school children of all ages. A primary goal of nutrition education is to prepare school age children for a lifetime of healthy dietary habits.

Nutritious Snacks

Snacking has become part of the fast-paced American lifestyle. Nutritious snacks can contribute valuable nutrients and can help meet the daily nutrient requirements for persons of all ages. Snacks are especially beneficial for small children and older adults who have difficulty consuming adequate amounts of food at mealtime. Adolescence is a time of rapid growth, and many teenagers need snacks to provide additional nutrients and calories. Many people feel better when they consume five or six small meals rather than the customary three meals a day.

Snack foods not only contribute to daily nutrient needs, but also contribute to the total number of calories consumed.

There is an abundance of nutritious snack foods available to consumers. Offering people snack foods from the five food groups (Vegetables, Fruits, Breads and Cereals, Milk, and Meat) allows them to make nutritious choices. Some suggestions for nutritious snacks include:

- **Vegetables** such as broccoli and cauliflower florets, carrot sticks, celery sticks, cucumber slices, cherry tomatoes, and green pepper slices can be eaten alone or with dips made from low-fat yogurt or low-fat cottage cheese.
- **Fruits** that are easy to "take along" and make good snacks include apples, bananas, grapes, nectarines, oranges, peaches, pears, plums, raisins, and tangerines.
- **Breads and cereal products** are easy to serve for snacks. Include bagels, crackers, finger sandwiches, muffins, popcorn, pretzels, and tortillas in the list of snack choices. Children enjoy making shaped sandwiches by cutting bread into shapes with cookie cutters.
- **Milk beverages and milk products** such as cheese and yogurt are nutritious snack choices. Also included in this group are cottage cheese, frozen dairy products made with low-fat milk, and puddings. Adding fresh fruits to plain, low-fat yogurt makes a great snack and is lower in fat and calories than commercial fruit yogurts.
- **Meat group foods** can be snack foods, too. Tuna fish and peanut butter can be served with crackers or used as the filling for finger sandwiches. Nuts and seeds provide protein in the form of a crunchy, ready-to-eat snack.

It is important to be aware of the many snack foods that are high in calories, fat, salt, and sugar. Many of these foods contain coconut oil or palm kernel oil which are high in saturated fat. It is necessary to read the nutrition information on the labels carefully to be sure the oil used is one of the unsaturated oils, such as canola, corn, safflower, or soybean.

Food Choices and Peer Pressure

Typically, most Americans associate food and eating with social experiences. Even the family evening meal is a social gathering. Food choices and food preferences are influenced by family traditions, personal likes and dislikes, as well as those likes and dislikes of friends and family members. In teaching children and adolescents to make wise food choices, it is important to recognize that peer pressure is a major factor. Students who learn decision-making skills and have a good self-concept are more likely to be able to make food choices based on nutritional knowledge rather than on peer pressure.

NUTRITIONAL NEEDS DURING THE LIFE CYCLE

Nutritional needs change during the various stages of the life cycle. The varying stages of growth that take place from infancy through adolescence make different demands on the body's nutritional health. Likewise, the three stages of adulthood have different nutritional requirements.

Due to increased health awareness and advances in medical science, Americans are living longer than ever before. It is anticipated that by the year 2050, the percentage of the population age eighty-five years and older will increase to more than 5 percent of the total U.S. population. These predictions increase the need for consumers to understand the nutritional needs during the various stages of the life cycle. Figure 4 lists the stages and nutritional requirements of various stages of the life cycle.

Special Dietary Needs

In the last decade, the American population has taken a serious look at health and health issues. The relationship between lifestyles, daily diets, and health and fitness has become a topic of conversation and confusion for many people. Media attention to all types of special diets has caused alarm for many people. It is necessary to understand the health problems that require people to greatly modify their diets. Information related to low-cholesterol, low-fat, low-salt, and low-sugar diets is important for all consumers to know and understand.

Special Nutrition Requirements During the Stages of the Life Cycle

Life Cycle Stage	Nutrition Requirements
Pregnancy (Includes nursing mothers)	Approximately 300 additional calories are required each day for increased energy needs. Weight gain should average between 24 to 28 pounds during pregnancy. A well-balanced, nutritious diet is important because of the increased need for protein, vitamins, and minerals. The diet should include more milk products and more fruits and vegetables.
Infancy (Birth through 1 year)	Most of the infant's nutritional needs during the first year are met through human milk or infant formula. Formulas contain amounts of protein, vitamins, and minerals recommended by the American Academy of Pediatrics. Some formulas are iron-fortified. It is not recommended that solid foods be given to infants until four to six months of age.
Early Childhood (2 years through 5 years)	Childhood obesity and iron-deficiency anemia are the two nutritional problems most commonly diagnosed during childhood. Children should be fed nutritious foods at every meal. Breakfast is especially important, and nutritious snacks help meet the child's daily nutrient needs. Iron-fortified breakfast cereals and lean meat help supply daily iron requirements.
Middle Childhood (6 years through 12 years)	Children should be encouraged to eat a variety of nutritious foods at mealtime and snack time in order to meet their daily nutritional needs for growth and development. Children of this age can learn to choose healthy foods. Snack foods may need to be monitored at this time because
Adolescence (13 years through 20 years)	Rapid growth periods occur in girls between the ages of 10 and 13 years, and in boys between the ages of 12 and 15 years. Consumption of well-balanced, nutritional meals is important during these years. An increased need for calcium occurs due to rapid bone growth. Teens need to increase their intake of foods from the milk group. Poor food choices during adolescence lead to inadequate intake of calcium, vitamin A, and fiber, iron-deficiency anemia, and excessive intake of saturated fats, sugar, and empty calorie foods.
Young Adulthood	It is important for young adults to realize that the food choices, health practices, and lifestyle decisions made in the young adult years have significant effect on health and wellness in later life. Eating a well-balanced diet and exercising on a regular basis are good beginnings for young adults. Iron and calcium intakes are very important. Refrain from smoking and consuming alcohol and try to manage stress.
Middle Adulthood (41 years through 65 years)	Adults in this stage need to follow the guidelines for good health and disease prevention. These guidelines recommend that people should eat a variety of foods, maintain desirable weight, avoid too much fat, saturated fat, and cholesterol, increase intake of foods with sufficient starch and fiber, avoid eating too much sugar and sodium, exercise regularly, refrain from smoking and moderate alcohol intake, and try to manage stress.
Older Adulthood (over 65 years)	A healthy diet can help reduce some of the effects of aging. Poor nutritional health at this stage can affect the severity of disease, as well as affect mental function. Some guidelines for nutritional health for older adults include four to six small meals eaten frequently, sufficient intake of vitamins B_6, B_{12}, thiamin, C, D, E, and the minerals calcium, iron, and zinc is important. Regular exercise is needed to stimulate appetite and food intake. Weight loss can increase the risk of death following illness or disease.

Figure 4

BEST COPY AVAILABLE

Advances in medical science have shown an increasing relationship between the food consumed and good health and that diet is related to disease and recovery. Recently, diet and health information has centered on preventive measures that might reduce a person's risk of heart disease, diabetes, or cancer.

Lowering Blood Cholesterol Levels.

In recent years, cholesterol has received much media attention and has become a household word. Cholesterol is an odorless, soft, waxy substance found in every cell in the body. Cholesterol performs several functions in the body. These include:

- to aid in digestion
- to contribute to the structure and function of cell membranes
- to assist in the manufacture of vitamin D (calciferol) and hormones

It is not necessary to eat foods containing cholesterol because the liver makes most of the cholesterol that the body needs. Even though cholesterol is found in every cell in the body and is necessary for its function, it also makes up the main part of the plaques that block the arteries in atherosclerosis.

Cholesterol travels through the bloodstream in lipoproteins. Lipoproteins are lipids combined with proteins that transport lipids in the blood. There are two types of lipoproteins that transport cholesterol throughout the body. The two types are:

- low-density lipoprotein (LDL)
- high-density lipoprotein (HDL)

Low-density lipoproteins (LDL) carry cholesterol from the liver throughout the body but do not return the cholesterol to the liver. Therefore, cholesterol remains in the arteries and can cause a buildup in the artery walls. High-density lipoproteins (HDL) clear excess cholesterol from the arteries and carry it back to the liver where it is processed and removed from the body. LDL is often called "bad" because of its inability to remove cholesterol from the bloodstream. HDL is often called "good" because of its ability to prevent cholesterol and fat deposit buildup in the artery walls. It is this buildup of cholesterol plaques that contributes to advanced atherosclerosis.

DIETARY GOALS FOR LOWERING BLOOD CHOLESTEROL LEVELS

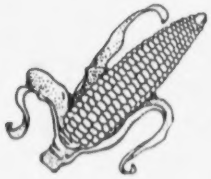
1. Reduce total fat intake to 30 percent of total calories.
2. Include more whole grains in the daily diet.
3. Eat fish more often.
4. Increase consumption of fiber-rich fruits and vegetables.
5. Add the many varieties of legumes to the daily diet more often, such as dried beans and peas and soybeans.
6. Include nonfat or low-fat milk and milk products every day.
7. Reduce the cholesterol-rich foods in the diet, especially organ meats, egg yolks, shellfish, and fatty red meats.

Figure 5

Cholesterol is found only in foods of animal origin. Foods high in cholesterol are egg yolks, liver organ meats, shellfish, lard from animals, and butter. Foods that contain no cholesterol or are low in cholesterol include egg whites, fruits, vegetables, and grains and grain products. One of the major factors in blood cholesterol levels is the dietary intake of fats—particularly saturated fats. Fats are discussed in detail in the earlier section on "Fats." There are certain dietary goals that prove beneficial in lowering blood cholesterol levels. These dietary goals for lowering blood cholesterol are described in Figure 5.

Achieving Low-Fat Diets.

Many Americans are selecting low-fat diets and exercising in an attempt to reduce their risk of coronary heart disease and cancer. ***Fats*** are lipids that are in a solid state at room temperature. ***Oils*** are lipids that are in a liquid state at room temperature. ***Lipid*** is the scientific term that includes all of the fats, fat-related substances, and oils. Fat is one of the essential nutrients and performs several functions in the body. Fats, or lipids, help maintain healthy cell walls, store energy, and transport the fat-soluble vitamins A, D, E, and K throughout the body. Without the presence of fat, these vitamins would not be utilized.



Linoleic acid is an essential fatty acid. It is found in polyunsaturated fat substances, and is important for clotting blood and lowering blood pressure. Linoleic is the only fatty acid the body does not make. It must be eaten in plant foods such as corn, safflower, or soybean oils. Figure 6 gives the formula for figuring the percent of fat calories in the diet.

Figuring the Percent of Fat in the Diet

Number of grams of fat
X 9 calories per gram
Total number of calories from fat

Total number of calories from fat ÷ Total number of calories daily = Percent of calories from fat

Example: An adolescent who eats 2,000 calories per day could figure the percent of his or her diet that was from, fat if 80 grams of fat were consumed.

80 grams of fat
X 9 calories per gram
720 calories from fat

720 calories from fat ÷ 2000 calories per day = 36 % from fat

Figure 6

To Achieve a Low-fat Diet

- Read labels to learn the fat content of foods.
- Choose to bake, broil, braise, or steam foods; eliminate frying.
- Refrigerate soups and stews before serving. Skim off hardened fat.
- Reduce intake of high-fat desserts.
- Reduce consumption of bacon, sausage, and luncheon meats.
- Use herbs, spices, and lemon juice to season and flavor foods.
- Choose canned fish products packed in water.
- Try using low-fat, low-calorie salad dressings.
- Use non-stick sprays in frying pans before sauteing.
- Choose low-fat or fat-free menu items and snack foods.
- Skin poultry and trim visible fat from lean meats.
- Use vegetable protein sources such as lentils, dried beans, and peas.
- Use low-fat and nonfat dairy products.
- Reduce consumption of foods high in saturated fat.
- Reduce total dietary fat intake.

Figure 7

At nine calories per gram, fats supply twice as much energy as carbohydrates and proteins. Carbohydrates and proteins provide four calories of energy per gram. It is not necessary to consume a fat-rich diet because the body makes fat from excess carbohydrates and proteins not used for energy. Diets containing large amounts of fat can lead to health risks.

Health professionals believe that the average American diet contains too much fat. Although there is no RDA for fat, it is recommended that fat intake be limited to 30 percent of the total calories.

Some commonly eaten foods may have a higher fat content than many consumers realize. For example, amounts of fat in common foods include:

- Hamburger with mayonnaise—approximately 35 grams of fat, 315 calories from fat
- Club sandwich—approximately 30 grams of fat, 270 calories from fat
- Fried onion rings—approximately 23 grams of fat, 207 calories from fat
- Beef burrito—approximately 21 grams of fat, 189 calories from fat
- Baked potato with sour cream and chives—approximately 24 grams of fat, 216 calories from fat
- Baked potato, plain—approximately 2 grams of fat, 18 calories from fat

(These are approximate amounts. The exact fat content would vary, depending on the serving size and method of preparation.)

High-fat diets lead to elevated blood cholesterol levels. People with abnormally high blood cholesterol levels are in a high-risk group for advanced atherosclerosis. In order to maintain a normal blood cholesterol level, people should reduce their intake of saturated fats. Figure 8 lists examples of foods high in saturated and unsaturated fats.

Foods High in Saturated Fat

- Bacon, some luncheon meats
- Beef, lamb, pork, chicken with skin
- Butter and lard
- Cakes, pastries
- High-fat cheeses
- Sour cream and ice cream
- Tropical oils (coconut, palm, and palm kernel)

Foods High in Unsaturated Fat

- Nuts—peanuts, pecans, cashews, walnuts
- Soft margarines and spreads
- Vegetable oils—canola, corn, cottonseed, safflower, soybean, sunflower

Figure 8

Sodium and Hypertension.

Sodium and potassium are minerals that function in the body as electrolytes. Electrolytes affect the way fluid is distributed in the body and aid the nervous system in transmitting nerve impulses that control muscle action. This is very important in keeping the heart beating normally. Sodium also helps the kidneys to maintain a normal acid/alkali balance in a person's body. Potassium loss along with sodium loss causes vomiting, diarrhea, and increased sweating. Replace fluids with juices and fruit. There is no need to take salt tablets.

There is no minimum daily requirement or RDA for sodium because the American diet shows no evidence of shortage of this mineral. In fact, the opposite is more likely true. A large portion of the population has elevated sodium levels. For individuals with hypertension, sodium intake should be regulated. ***Hypertension***, or high blood pressure, means that the heart must work much harder to pump the blood. High blood pressure can be hereditary and can be intensified with obesity and too much sodium in the diet.

Due to the increased incidence of hypertension in adults, The National Research Council, Food and Nutrition Board, recommends that healthy adults and children consume no more than 2400 milligrams of sodium per day. Figure 9 lists commonly eaten foods that are high in sodium.

Foods High in Sodium

Food	*Amount*	*Sodium Content (mg)*
Bacon	3 slices	303
Catsup	2 Tbsp.	312
Salt	1 tsp.	2100
Worcestershire sauce	1 Tbsp.	315
Cheese, processed	1 oz.	406
Frankfurter (beef and pork)	1	504
Peanuts, salted	1 c.	626
Pizza, cheese	1 slice	699
Luncheon meat	2 pieces	810
Cottage cheese, small curd	1 c.	850
Soup, canned tomato	1 c.	872
Pickles, dill	1 whole	928
Olives, green	10	936
Burrito, bean	1	1030
Ham, lean	3 oz.	1128
Corn dog	1	1252
Enchilada	1	1332
Smoked Salmon	3 oz.	1700

Source: "Nutritive Value of Foods," *Home and Garden Bulletin No. 72*, United States Department of Agriculture, Revised April 1981.

Figure 9

Reducing Sugar in the Diet.

The average American consumes an estimated sixty to eighty pounds of sugar a year. That is approximately one-fourth pound of sugar per day. One reason for this high intake of sugar could be the amount of hidden sugar found in convenience food items not normally thought of as sweets.

Several carbohydrates are broken down into simple sugars during digestion. These terms often are used on food labels in place of the word *sugar*. Figure 10 lists the most commonly used terms.

PURE
VERMONT
Maple Syrup

Food labels also may have other terms for sugar which include:

- brown sugar
- confectioner's sugar
- corn sweeteners
- corn syrup
- dextrose
- granulated sugar
- high-fructose corn sweeteners
- honey
- invert sugar (glucose and fructose)
- maple sugar
- molasses
- natural sweetener
- raw sugar

Sugar Terms Most Commonly Used on Food Labels

sucrose—	white refined table sugar, brown sugar, confectioner's sugar
fructose—	the most concentrated sweetener (found in fruits); small amounts provide the same sweetening as larger amounts of other sugars
maltose—	malt sugar; found in breads and cereals
lactose—	milk sugar; found in milk and milk products
glucose—	honey, corn syrup

Figure 10

The Dietary Guidelines for Americans found in Appendix F suggests that people increase their intake of complex carbohydrates and decrease their intake of simple carbohydrates. Currently, it is estimated that the typical American consumes 25 percent from complex carbohydrates.

It is recommended that people reduce their simple carbohydrate intake to only 10 percent of total calories and increase their complex carbohydrate intake to 50 percent of all calories. Diets low in pure sugar and high in complex carbohydrates are generally lower in fat and calories and higher in fiber than diets that contain a large percentage of pure or refined sugars.

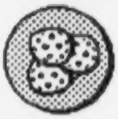
All forms of sugars, as well as all digestible carbohydrates, have four calories per gram. High-sugar foods are not recommended for people who have health problems such as diabetes, obesity, heart disease, and tooth decay.

Figure 11 lists foods that contain simple carbohydrates and those that are classified as complex carbohydrate foods. Foods from the complex carbohydrate list should be chosen as sources of energy and for their valuable vitamins and minerals.

Simple and Complex Carbohydrate Foods

Simple Carbohydrate Foods

cakes
candies
cookies
dried fruits
honey
jams and jellies
pastries
soft drinks
sugars
syrups



Complex Carbohydrate Foods

breads
cereal grains
crackers
fresh fruits
fresh vegetables
legumes
pasta

Figure 11

There is no evidence that a high-sugar diet causes heart disease. The relationship to heart disease occurs because persons with high-sugar diets are often overweight. Obesity is a risk factor for heart disease. Too much sugar in the diet is a factor for tooth decay. Sugary foods create a perfect climate in the mouth for the growth of bacteria that destroys tooth enamel and causes tooth decay.

Consumers must learn to identify sugar in their diets. Strategies for reducing the amount of sugar in the diet include the following:

- Select pure fruit juices rather than soft drinks or imitation fruit drinks.
- Choose unsweetened cereals rather than the presweetened varieties. Learn to read the labels for sugar content.
- Eat fruits canned in natural juices rather than in heavy syrups.
- Reduce intake of "empty calorie" foods. Empty calorie foods contain calories but no nutritional value, such as soft drinks.
- Select fresh fruits for snacks. The sugar content of dried fruits is much higher.
- Try using the sweet spices—allspice, cardamom, cinnamon, cloves, coriander, ginger, and nutmeg—to replace some of the sugar in recipes.
- Be aware that a product is high in sugar if sugar is one of the first three ingredients listed on the label.

Nutrition and Disease

Nutrition plays an important role in the prevention and treatment of certain diseases and health problems. The body's ability to resist disease is directly related to nutritional health.

Nutrients found in food are essential for overall health and well-being. Although nutrients do not cure an illness as medicines do, the well-nourished body is better prepared to fight disease and keep itself healthy. Preventive nutrition is the process of maintaining good health and well-being through good nutrition practices before illness occurs.

The Common Cold.

Many people believe that consuming large amounts of a certain food or taking large doses of vitamin supplements will cure an illness or disease. For many years, it has been rumored that consuming large doses of vitamin C (ascorbic acid) will prevent or cure the common cold. Scientific research indicates that large doses of vitamin C have no effect on the virus that causes colds.

Since vitamin C is a water-soluble vitamin, amounts above the body's daily need is excreted through the urine. However, it has been shown that megadoses of vitamin C above 2 grams can be harmful. Two grams of vitamin C are equivalent to 2,000 milligrams. The U.S. RDA for vitamin C is 60 milligrams. Therefore, a person who take four 500 milligram vitamin C tablets is consuming three and one-half times the recommended amount. The person whose diet meets the minimum daily requirement of nutrients will most likely suffer less severely from colds, and the person will possibly recover sooner.

Cancer.

Research has shown that diet and nutrition are related to cancer in several ways. It is evident that people's eating habits influence their susceptibility to certain kinds of cancer. However, there are many factors involved when considering the cause, prevention, and recovery from cancer. Besides diet and nutrition, genetic and environmental factors are also known to be involved. The challenge for researchers is to continually compare the dietary practices of those persons who get cancer with those who do not. One factor is clear, the risk of developing cancer may be greatly reduced in persons who make wise food choices and eliminate tobacco consumption.

Reduction of cancer risk by diet does not depend on any single factor, but requires an overall change in eating patterns and food preparation methods. The American Cancer Society has recommended the following guidelines for the public.

The American Cancer Society Dietary Guidelines.

1. **Avoid obesity.**
2. **Cut down on total fat intake.**
3. **Include a variety of vegetables and fruits in the daily diet.**
4. **Eat more high fiber foods, such as whole grain cereals, vegetables, and fruits.**
5. **Limit consumption of alcoholic beverages.**
6. **Limit consumption of salt-cured, smoked, and nitrite-cured foods.**

Research on cancer risk and the diet suggests that people modify their food choices using these guidelines so as to reduce their risk of developing cancer. Choosing a wide variety of nutrient-rich foods as well as reducing fat intake and increasing intake of vegetables and fruits is a prescription for healthy eating.

The American Cancer Society has a new comprehensive program that incorporates the most up-to-date educational strategies and information on the links between diet, nutrition, and cancer. This program, "Changing the Course," includes a nutrition curriculum for elementary, intermediate, and secondary students, and a manual for school food service providers.

Diabetes.

Diabetes is a genetic disorder and is not caused by eating too much sugar. Diabetes occurs in an individual whose pancreas does not produce enough insulin to control blood sugar levels. Diabetics must control their dietary intake in order to maintain normal blood sugar levels.

Heart Disease.

It is estimated that more than half of the people who die in the United States each year die of cardiovascular disease. Cardiovascular disease is a term that covers all the diseases of the heart and blood vessels. Most of these deaths can be attributed to atherosclerosis. ***Atherosclerosis*** is an accumulation of lipid plaque within the arterial wall which results in a narrowing of the artery. It is also known as a hardening of the arteries. Lipid is a term used to describe fats, oils, and fat-related substances. Atherosclerosis leads to the closing or blocking of the arteries that supply blood to the heart and brain. Obstruction or blockage in the arteries can cause heart attacks and strokes.

Most people have some plaque in their arteries. The important factor is how advanced the buildup is and what can be done to slow down its progression.

Risk Factors Relating to Atherosclerosis

- **Smoking.** Smoking is considered one of the causes of heart disease. Smoking reduces the level of HDL cholesterol; HDL is the good cholesterol.
- **Gender.** Males are more prone to heart disease than females.
- **Heredity.** Persons with a family history of heart disease and diabetes have a greater risk.
- **High blood pressure.** Also known as hypertension, high blood pressure is a major risk factor in heart disease and strokes.
- **High blood cholesterol level.** It is generally recommended that blood cholesterol levels be lower than 200 milligrams per 100 milliliters of blood.
- **Lack of exercise.** Regular exercise helps control weight, reduces stress, and improve circulation.
- **Obesity.** Obesity causes increased stress on the heart and other organs and increased levels of serum cholesterol.
- **Stress.** There appears to be some link between a person's personality, reaction to stress, and heart disease.
- **Personality characteristics.** Type A behavior. Type A personalities are most generally competitive, resist fatigue, tense, and withhold emotions.

Figure 12

By identifying and controlling the risk factors that are present in one's life, a person can slow the progression of atherosclerosis. Figure 12 lists the risk factors related to atherosclerosis. Good nutrition, along with the other factors, plays an important role in preventing heart disease. Research has shown that it is a combination of the risk factors, rather than just any one in particular, that makes some persons more susceptible to heart disease than others.

The American Heart Association has devised an eating plan that helps lower blood cholesterol levels. The eating plan is based on these American Heart Association dietary guidelines:

- Total fat intake should be less than 30 percent of calories.
- Saturated fatty acid intake should be less than 10 percent of calories.
- Polyunsaturated fatty acid intake should be no more than 10 percent of calories.
- Monounsaturated fatty acids make up the rest of total fat intake, about 10 to 15 percent of total calories.
- Cholesterol intake should be no more than 300 milligrams per day.
- Sodium intake should be no more than 3000 milligrams (3 grams) per day.

The American Heart Association "Eating Plan Tips" are shown in Figure 13.

Eating Plan Tips

To control the amount and kind of fat, saturated fatty acids, and dietary cholesterol you eat:

- **Eat no more than 6 ounces (cooked) of lean meat, fish, and skinless poultry per day.**
- **Try main dishes featuring pasta, rice, beans, and/or vegetables. Or create "low-meat" dishes by mixing these foods with small amounts of lean meat, poultry, or fish.**
- **The approximately 5 to 8 teaspoon servings of fats and oils per day may be used for cooking and baking, and in salad dressings and spreads.**
- **Use cooking methods that require little or no fat—boil, broil, bake, roast, poach, steam, saute´, stir-fry, or microwave.**
- **Trim off the fat you can see before cooking meat and poultry. Drain off all fat after browning. Chill soups and stews after cooking so you can remove the hardened fat from the top.**
- **The 3 to 4 egg yolks per week included in your eating plan may be used alone or in cooking and baking (including store-bought products).**
- **Limit your use of organ meats such as liver, brains, chitterlings, kidney, heart, gizzard, sweetbreads, and pork maws.**
- **Choose skim or 1% fat milk and nonfat or low-fat yogurt and cheeses.**

To round out the rest of your eating plan:

- **Eat 5 or more servings of fruits or vegetables per day.**
- **Eat 6 or more servings or breads, cereals, or grains per day.**

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Figure 13

Along with the dietary changes for reducing the risk of coronary heart disease, other lifestyle changes also reduce the risk. These are identified in Figure 14.

LIFESTYLE CHANGES THAT REDUCE THE RISK OF HEART DISEASE

- **Stop smoking.**
- **Reduce blood pressure through diet or medication.**
- **Reduce body weight if needed.**
- **Increase exercise and activity.**
- **Reduce stress and enjoy life.**

Figure 14

As research concerning the relationship of diet, exercise, and coronary heart disease continues, people must stay informed of the latest findings, and in the meantime, take a rational approach to modifying their diet. The recommendations from the health professionals seem to be that persons who do not suffer from any particular health problem should choose a healthful diet by eating a variety of foods in moderate amounts that supply their daily nutrient requirements. This practice will ensure a lifetime of healthy eating.

Americans are striving to become a healthier population. More people than ever before are taking an interest in their nutritional and overall health and well-being. Hopefully, this will lead to a drastic reduction in the number of deaths from cardiovascular disease.

CULTURAL ASPECTS OF FOOD

Cultural, societal, and religious laws have great influence on all aspects of food consumption. ***Society*** refers to a group of people who share a common culture and live within a common region. ***Culture*** refers to the beliefs, traditions, and values that are shared by the people within a society. In the American society, citizens depend on advances in science and technology to continually improve the way food is produced, harvested, and transported. However, within the American society there are subcultures that restrict the use of certain types of food. For example, the Amish culture restricts the use of advanced technology in producing, harvesting, or transporting food for the Amish people.

Within all societies, many different cultural laws affect food consumption. In some instances, governments restrict the import or production of certain foods due to cultural or religious beliefs. In most societies, food is used as a symbol of love, affection, and social ties to family and friends. These food traditions serve to strengthen family and social relationships.

In all societies, food has been used to distinguish social class and to symbolize wealth and prestige. Many pregnant and nursing women avoid eating certain foods because they believe the foods cause harm to the unborn child. The cultural beliefs, traditions, and values of people within societies determine the customs for how food is used.

Religious Customs

Religious beliefs within societies influence the many rituals and customs surrounding food. Some societies believe that avoiding certain foods protects them from harm. Some religions have customs surrounding the consumption of certain foods during religious holidays or special holy days. Many religious ceremonies are accompanied by feasts with family members and friends. In the United States, religious ceremonies such as baptisms, weddings, and funerals are usually followed by a gathering involving food.

NUTRITION ISSUES

Americans are living in the midst of an "information explosion." Every day new information is presented to consumers to be digested, assimilated, or rejected. With all of this wealth of information to be considered, it is not surprising that many consumers have experienced "information overload" and need guidance in sorting fact from fiction. The science of nutrition is deeply involved in this "information explosion." Currently, there are some nutrition issues that seem to be concerns of many consumers. These issues include eating disorders, fad diets, vitamin/mineral supplements, nutrition labeling, weight control, and physical fitness.

Eating Disorders

Eating disorders, primarily anorexia nervosa and bulimia nervosa, are diseases that are characterized by a preoccupation with weight loss and thinness. These disorders can have damaging effects on the physical and mental health of the persons plagued by them. Compulsive overeating is also recognized as an eating disorder.

Anorexia Nervosa.

In an affluent society where food is plentiful, an illness known as anorexia nervosa affects almost one out of every 100 young women. ***Anorexia nervosa*** is an eating disorder characterized by an obsessive and compelling desire to be thin. Out of every twenty young people with this disorder, nineteen of them are female. This disorder resembles an addiction because the person becomes totally obsessed with weight loss and a lifestyle of self-prescribed starvation takes over. This self-imposed starvation slowly begins to affect the person's personality and ability to think rationally. Many times this obsession with thinness causes the person to resort to excessive exercise in combination with the starvation. This can result in serious bodily injury because the body has not been supplied with the energy and nutrients needed. Physical symptoms of anorexia nervosa are shown in Figure 15.

One of the consequences of malnutrition secondary to anorexia nervosa is anemia. Anemia is a condition in which the blood cannot transport oxygen to the cells in the body. This is caused by a shortage of red blood cells or the presence of abnormal ones. Anemia is often a result of nutritional deficiencies and other diseases.

Physical Symptoms of Anorexia Nervosa

- *Deterioration of the body; especially muscle wasting and inadequate fat stores*
- *Menstruation stops in females; impotency occurs in males*
- *Skin assumes dry, yellowish tint*
- *Low blood pressure*
- *Heart function becomes inefficient due to the effect of starvation on hormones that regulate blood pressure*
- *Excessive hair growth on the body (possibly for warmth)*
- *Anemia*
- *Interrupted sleep patterns; bad dreams*
- *Feels fat (distorted perception)*

Figure 15

The treatment for anorexia nervosa is threefold. First, it involves medical personnel in the diagnosis and treatment of the medical complications that arise from prolonged starvation. Second, the treatment involves psychiatric or psychological personnel identifying and treating the underlying psychological problems which manifest as severe eating disorders like anorexia nervosa and bulimia nervosa. Third, the dietitian provides nutrition counseling for the patient to help with maintaining a balanced, nutritious diet.

Bulimia Nervosa.

Bulimia nervosa is another eating disorder that has plagued our affluent society since it was first recognized as a medical disorder in 1980. It is similar to anorexia in that it seems to strike mostly young women who have an obsession with an unrealistic perfect body. Some characteristics of people with bulimia include:

- They participate in binge eating followed by purging. Purging is an attempt to remove food from the body either by self-induced vomiting or the continual use of laxatives.
- They are successful and desire perfection.
- They turn to food in a crisis.
- They have a history of dieting and weight gain during the teen years.
- They binge and purge secretly.

Bulimia nervosa is an eating disorder characterized by self-induced vomiting following binge eating. Binge eating is the overindulgence of food without control or rational judgment about the amount being consumed. Sometimes a person with bulimia uses laxatives, diuretics, fasting, and excessive exercise to rid his or her body of what is thought to be harmful. These binge/purge cycles are not in response to hunger, but rather a compelling need by the person with bulimia to rid his or her body of food that might cause weight gain. Bulimic behavior is sometimes brought on by family stress or feelings of rejection. Characteristics of a person with bulimia are low self-esteem, social anxiety, depression, isolation, and difficulty with interpersonal relationships. Figure 16 lists the dangerous effects of bulimia.

Dangerous Effects of Bulimia Nervosa

- *irritation of the esophagus*
- *abnormal heart rhythms*
- *injury to the kidneys*
- *bladder and kidney infections, possibly causing kidney failure*
- *lacerations or tears to the stomach, caused by excessive vomiting*
- *tooth decay*
- *malnutrition*

Figure 16

The treatment for bulimia nervosa is similar to that of anorexia nervosa because it involves the assistance of medical, psychological, and dietetic personnel. Through nutrition counseling, psychotherapy, and medical therapy, the bulimic patient can regain a new sense of self-worth and learn ways to control the need for binge eating. However, our society must change its attitude toward the unrealistic images of perfect people with perfect bodies that are expressed through the media.

It is imperative that positive messages of respect and value for each individual's unique qualities and talents replace those negative messages currently seen by the young people of the affluent nations. Ideally, this type of societal change would greatly reduce the number of victims of anorexia nervosa and bulimia.

Weight Control

Consumers as well as nutritionists and physicians are continually being challenged with maintaining ideal weight throughout adulthood.

Research has shown that serious overweight problems lead to many health problems such as coronary heart disease, diabetes, gall bladder disease, high blood pressure, respiratory problems, and stroke. Overweight people also face problems with fatigue and degenerative arthritis.

Once a person has a serious weight problem, finding solutions to weight loss become increasingly more difficult. It is definitely more difficult to lose excess weight than it is to maintain ideal weight in the beginning. Weight loss will only occur as a result of expending more calories through exercise and activity than is consumed through food. Most generally eating habits and behavior must be changed in order to maintain the ideal weight once the excess weight is lost. This requires self-discipline and is difficult, but it also restores self-esteem, self-confidence, and gives a feeling of accomplishment.

Fad Diets

Americans look for quick and easy fixes to the overweight problem. These quick fixes or "fad diets" cause their followers many disappointments, such as:

- disillusionment
- loss of money
  (from purchasing products, equipment, *remedies*, etc.)
- unsuccessful weight loss
- weight gain with an increase of body fat

These fad diets fail because they are not generally nutritionally balanced, are unhealthy, and provide only a temporary solution to a permanent problem. They do not follow sound nutritional practices or change lifelong eating habits.

On the other hand, effective diet plans that are prescribed and conducted under the supervision of registered dietitians and physicians provide the overweight individual with a much better chance at success. Some characteristics of effective diet plans include:

- nutritionally balanced meal plans
- methods for teaching new eating habits
- menus that offer choices of a wide variety of foods
- meal plans that include a balance of calories (the recommended proportion of carbohydrate, fat, and protein)
- satiety value which keeps the person feeling satisfied and delays hunger for a period of time
- an average of 1200 calories per day for adult women and 1500 calories per day for adult men (less than 1,000 calories per day will not provide the needed nutrients and will most likely leave the person feeling tired and hungry)

Weight control and weight loss in children and adolescents must be carefully monitored by physicians. Due to the rapid growth and development than occurs during these years, it is imperative that any weight loss programs for children and adolescents be prescribed and supervised. Rapid weight loss and calorie restriction in children and adolescents can cause serious health hazards.

Vitamin and Mineral Supplements

Americans spend billions of dollars in vitamin supplements. Many people use vitamin-mineral supplements because they feel their fast food and snack food diets are inadequate in providing the essential nutrients.

Vitamins work cooperatively with each other and with other nutrients to perform their functions in the body. Therefore, the best way to meet the daily need for nutrients is through a balanced diet that contains a wide variety of foods.

By law, all vitamins must have the same chemical formula, whether they are *natural* or *synthetic*. Natural vitamins are made with extracts from foods. Synthetic vitamins are chemically formulated. The human body cannot distinguish one from the other, so it is not necessary to purchase the more expensive *natural* vitamins.

There are some people who do have vitamin and mineral deficiencies and need to take nutrient supplements. Some people who may be at risk for deficiencies include:

- pregnant and lactating women
- elderly persons with inadequate diets
- persons recovering from burns, injuries, or surgery
- children and adolescents with inadequate diets
- persons with chronic illnesses
- individuals with gastrointestinal malabsorption problems
- alcoholics

In most circumstances, vitamins taken in excess are of no value. Megadoses of vitamins A (retinol) and D (calciferol) can cause serious health problems. Fat-soluble vitamins such as A and D that are not used by the body are stored in fat. This makes a buildup of these vitamins more likely and more toxic. Water-soluble vitamins not used by the body are excreted in the urine, making it less likely for toxic levels to occur.

Labeling

The Nutrition Information Panel is the term used to describe the nutrition content information that is printed on food labels. Nutritional labeling guidelines were first established by the Food and Drug Administration in 1938. In 1967, the Fair Packaging and Labeling Act required that all labels on packaged foods contain four important facts.
These include:

1) identity of the food
2) the name and address of the manufacturer, packer, and distributor
3) net contents (actual weight without the package) of the product
4) ingredients must be listed on a single panel with the common names of the ingredients appearing in decreasing order of weight if no standard of identity has been established

The FDA is in the process of amending the food labeling regulations. Some problems that have occurred because the labels are not currently standardized include:

- Many labels omit cholesterol information
- Many labels fail to specify carbohydrates as starch or sugar
- The fiber content is often omitted
- Many labels fail to specifically identify the oils used

Increased scientific knowledge about the relationship between health and certain food components such as cholesterol, fats, fiber, and sodium has prompted the FDA to update the labeling laws. These changes were also influenced by the growing public interest in the nutritional status of food products. The new labeling will be required on almost all packaged foods as well as fresh fruits, vegetables, and fish. These new labeling regulations also may be required of restaurants. Restaurants and fast-food establishments may be required to place nutrition information on menus or have the information accompany the food in some written form.

Sources of Reliable Nutrition Information

A variety of resources are available to provide the consumer with reliable nutrition information. Amidst the enormous amount of diet and nutrition information presented by the media, it is sometimes difficult for consumers to distinguish fact from fallacy. In teaching nutrition education to children, adolescents, and adults, it is important to depend on reliable sources for nutrition information.

Some reliable resources pertaining to food science and nutrition include information from these organizations:

- American Cancer Society
- American Diabetes Association
- American Dietetic Association
- American Heart Association
- Food and Drug Administration
- National Council Against Health Fraud, Inc.
- Texas Agricultural Extension Service
- Texas Department of Health and Human Services
- United States Department of Agriculture
- city health departments
- educational programs, including classroom instruction and textbooks
- professionals, such as registered dietitians, university nutrition professors, and home economists
- professional journals

Publications in professional journals as well as other periodicals provide current information on nutrition. Some of the professional journals include:

- *Critical Reviews in Food Science and Nutrition*
- *Food Science and Nutrition*
- *Journal of the American Dietetic Association*
- *Journal of Food Science*
- *Journal of Nutrition*
- *Journal of Nutrition Education*
- *Nutrition Today*
- *School Food Service Journal*

Along with the professional journals, there are a variety of newsletters that disperse reliable nutrition information. They are published by organizations, medical facilities, consumer agencies, and large corporations that have food science and nutrition related products. Some of the available food and nutrition newsletters include:

- *Consumer Reports Health Letter*
- *Dairy Council Digest* by the National Dairy Council
- *Food Insights* by the International Food Information Council
- *Food and Nutrition News* by the National Live Stock and Meat Board
- *Harvard Health Letter* published by the Harvard Medical School
- *Lifetime Health Letter* published by the University of Texas Health Science Center at Houston
- *Mayo Clinic Health Letter*
- *Nutrition and Health News* by the University of Texas Southwestern Medical Center at Dallas
- *Nutritional News and Views* published by Mead-Johnson
- *Tufts University Diet and Nutrition Newsletter* published by the Tufts University School of Nutrition
- *Nutrition Action Newsletter* published by the Center of Science in the Public Interest

Much nutrition information is disseminated through the media. For many Americans, the media is their greatest resource for current information. However, not all information conveyed through the media, especially that related to advertisements for various products, is completely accurate or reliable. This makes it difficult at times to distinguish between the reliable and the unreliable. The best assurance for verifying the accuracy of nutrition information is to confirm the information through one or more of the reliable resources available.

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Education for Self-Responsibility IV:

NUTRITION EDUCATION

GRADE PK

TEXAS EDUCATION AGENCY

ESR IV

The Many Cultures of Texas

Prekindergarten

The history of Texas has been shaped by its native peoples and the successive waves of explorers, pioneers, and immigrants. People of different cultures have come from around the world to settle in Texas. Texas is a very complex society, combining elements drawn from many cultures and ethnic groups. Its culture is the product of the contributions of these groups.

All Texans are members of an ethnic group. Some are members of more than one ethnic group. An ***ethnic group*** refers to a group of people with common racial and/or cultural characteristics such as religion, language, national origin, or tradition which makes them a distinct subgroup of society. These distinctions are based on physical or cultural traits or both. ***Culture*** refers to the ideas, traditions, skills, food, housing types, clothing, family structure, and arts that are passed from one generation to the next. It is important to remember however, that a person can belong to more than one ethnic group and have more than one cultural heritage. The attachment and identity one has to his or her specific ethnic or cultural group(s) varies depending on the individual. Ethnic or cultural attachment is very important for some people while it is of little or no importance to others.

Texas' teachers today face a group of heterogeneous students with various backgrounds and experiences. It is important to learn to appreciate and tap the cultural diversity of the students in Texas' classrooms. Students should be allowed to examine the history of the state's culture and heritage, and understand their own cultural backgrounds as well as those of others. By being aware of the past and taking time to learn how people live and think today, Texans can acknowledge accomplishments of these diverse groups and appreciate the society around them.

THE NATIVE TEXANS

Native Americans were the first group of people in Texas. There were many different tribes that lived in the different parts of the state. Between the 1500s and the 1800s, there were fourteen different tribal groups living in what is now Texas. Tribes are groups of Native Americans that live in the same general location, share the same language, follow the same leader or leaders, share the same customs, and have similar food preparation techniques and housing types. The fourteen tribes can be divided into four main groups or cultures. The four groups are as follows:

- Plains - Apache, Comanche, Kiowa, and Tonkawa
- Pueblo - Concho, Jumano, and Tigua
- Southeastern - Alabama-Coushatta, Atakapan, Caddoe, Cherokee, and Wichita
- Western Gulf Coast - Coahuiltecan and Karankawa

The Plains Indians were nomadic hunters. They had no permanent homes, but moved about in search of food and shelter. They relied primarily on the large herds of buffalo that roamed the Plains for their food, clothing, and shelter. They lived in tepees that were easily moved which enabled the Indians to follow the roaming buffalo herds.

The Pueblo Indians lived in the desert areas of West Texas in the area that is now El Paso and the land along the Rio Grande to the Big Bend area. The Pueblo Indians were a peaceful group of people, although they did fight occasionally with the Apaches (Plains Indians) when the Apaches entered their territory. They lived in large, flat-roofed buildings made of adobe brick which was made by drying clay mud in the sun. The adobe brick kept the homes cool in the summer and warm in the winter.

The Pueblos were primarily farmers who grew beans, corn, squash, and other vegetables. They used the Rio Grande for irrigation of their crops; however, when the Rio Grande was dry, they had to hunt small game and eat plants such as mesquite beans and prickly pears.

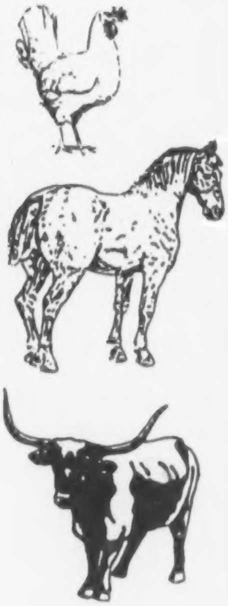
The Southeastern Indians were probably the richest and most advanced of the Native American tribes in Texas. They were not nomadic, but lived in settled villages located in East Texas and were primarily farmers. The term Southeastern Indians came from their location in the United States and their cultures included tribes outside of present day Texas including Alabama, Louisiana, and Mississippi.

One of the Southeastern tribes, the Caddoes, had several different ***bands*** or members of the tribe who joined together for a common purpose similar to a troop. One of these bands is credited for giving Texas its name. The Caddoes in one of the bands called each other *Taychas* which meant friend. The Spanish later referred to the Caddoes as Taychas pronouncing it as *Tejas*. The word was later adapted to its English version, *Texas*.

The Western Gulf Coast tribes lived along the Gulf of Mexico and were one of the first tribes to greet the European explorers. These Native

Americans were talented craftsmen who made canoes out of tree trunks which enabled them to fish for food in the Gulf waters. They were nomadic tribes who hunted rabbits, deer, and stray buffalo, but their primary diet consisted of fish, clams, oysters, porpoises, scallops, turtles, and underwater plants.

THE SPANISH INFLUENCE



The Spanish were the first Europeans to come to Texas. This was a natural avenue of expansion because they had already conquered Mexico. Of all the countries that explored the land now called Texas, the Spanish had the most lasting impact. To the Native Americans, the Spanish were men from another time bringing tools, guns, gunpowder, metal armor, and a different way of life. They brought new and strange creatures including horses, cattle, donkeys, chickens, goats, and swine. They introduced new building techniques, the wheel, the use of money, writing, printing, and new concepts of law and government. They also brought a new language as well as the Catholic religion. They were the first to explore and map the state, and they gave Texas its name soon after meeting the Caddoe tribe. Many of the towns that they named such as San Antonio, El Paso, and Nacogdoches still exist today.

Spanish friars and priests from Mexico came to Texas with the intent of teaching the Native Americans about Christ and the Spanish way of life. The Spanish government built missions which served as church institutions and were usually at the center of towns and settlements. The Alamo, originally the San Antonio de Valero Mission, was established as part of the Spanish attempt to settle Texas. As Spain began to lose control of its claimed territory, the missions were used as military outposts, or presidios, to forestall the advances of unfriendly visitors in Spanish lands. Many towns retained their Spanish names or were named after Spanish missions located near communities.

The Spanish influence upon architecture is still noticeable among the mission style structures in Texas and the southwest part of the United States. The original architecture was a combination of Native American adobe construction and roofs covered with Spanish tiles in shades of red. Mission structures were built around a common courtyard and included arched windows and doors, wrought iron exterior decor, and stucco (a type of plaster applied to exterior walls).

In the early 1700s, the Spanish had settled very little of Texas, so they sent a new governor to Texas named Marques de Aguayo whose job was to make all of Texas Spanish. Aguayo requested that Spain send families to settle near the mission of San Antonio de Valero and the presidio at San Antonio de Bexar. Their arrival marked the real beginning of the first town in Texas—San Antonio. Another settlement was established in East Texas between the Trinity and Neches rivers and included a presidio and four missions. One of the missions, Nuestra Senora de Guadalupe de los Nacogdoches, is situated near present-day Nacogdoches.

In the early 1800s, Spain allowed pioneers from the United States to settle in the area now known as Texas. The Spanish government issued land grants, pieces of land given to individuals by the government, to entice people to settle in Texas. ***Empresarios*** were people who got land grants and brought in large groups of people to form colonies or settlements in a particular area. One of the most famous empresarios during Spanish rule was Moses Austin. He had negotiated a land grant with the Spanish government but died before he was able to carry out his plans. His son, Stephen F. Austin, took over his efforts, but during his negotiations, Mexico won its independence from Spain, and he had to renegotiate his plans with the new Mexican government.

Spain ruled the area that is present day Texas for three centuries before losing control to their own descendants. Mexico, including Mexican Texas, became an independent country in 1821.

THE MEXICAN TEXANS

After Mexico became an independent country in 1821, the Mexicans immediately rushed into Texas to take control away from Spain. The Mexican government approved a constitution which included regulations for the continuation of immigration to Texas. U.S. immigrants typically settled in the eastern portion of the state, but the Native Mexicans moved northward from Mexico and established ranch sites or rancherias, along both sides of the San Antonio River. In the area of present-day Nacogdoches, approximately fifty rancherias existed which provided the foundation for future Texas towns such as Goliad, Nacogdoches, and Victoria.

Immigration was allowed for the next ten years only to be repealed by Mexican President Antonio Lopez de Santa Anna when he consolidated his powers as dictator. People from Mexico and Europe were still allowed into Texas, but people from the United States were forbidden. Many people protested the dictatorship, and clashes took place between small groups of people in Mexico and Santa Anna's army. The majority of people in Texas also disagreed with Santa Anna and his dictatorship. On March 2, 1836, Texas declared its independence from Mexico. There were many Mexican Texans who fought with the Texans to win independence, and it is estimated that one third of the Texan soldiers that fought against the troops of Santa Anna were Mexican Texans. After massacres of Texans by Santa Anna's armies at the Alamo and Goliad, Texans defeated Santa Anna's troops at San Jacinto and became an independent republic in June of 1836.

Land titles were given to many Mexican Texans in recognition of military service after Texas gained its independence. This group coupled with those families who held original land grants from Spain and Mexico comprised a large and influential group of citizens at the beginning of the Republic of Texas.

Food is a major influence of the Mexican culture in Texas. Mexican food was improvised by using simple cooking facilities, techniques, and available foods. Mexican foods in Texas differ somewhat from the traditional dishes of Mexico. The most commonly used foods among Mexican Texans include beans, beef, bread, chicken, chocolate, cheese, eggs, sugar, and tortillas. The most highly used seasonings include cilantro, coriander, cumin, garlic, onions, and peppers of various types.

Two important historical holidays are still celebrated by some Mexican Texans. ***El Diez y Seis de Septiembre*** commemorates Mexican independence from Spain and is celebrated on September 16. ***Cinco de Mayo*** is a festival that celebrates May 5, 1862 when six thousand French troops invaded Mexico, landing in the town of La Puebla. The French were defeated by two thousand Mexican forces under the leadership of Ignacio Zaragosa. Even though the struggle against the French lasted five more years, the May 5 victory gave the Mexicans a strong sense of unity and a reason to fight to save their independence.

Brownsville holds an annual four-day fiesta called ***Charro Days*** which celebrates the role of Mexican cowhands (charros or vaqueros) in Texas history. Participants dress in traditional Mexican clothes, dance, sing, eat, and put on shows.

Today, approximately three million Texans, or approximately 18 percent of the population are of Mexican birth or descent. These numbers represent the state's strong ties with its past and emphasize their importance to the state's future.

AFRICAN-AMERICAN TEXANS

The African-American population of Texas today comprises approximately 14 percent of the population in Texas. The African American history in Texas is different from that of other cultural groups in that their immigration typically occurred as a result of slavery. Slaves acquired through trade or conquest as well as free Africans, often accompanied many of the first European explorers and served as craftsmen, merchants, navigators, and soldiers. They were involved in the establishment of a Spanish colony in St. Augustine, Florida in 1565 and arrived in the English colonies in 1619 on a Dutch ship that landed at Jamestown, Virginia. Africans were also with the Spanish in the first explorations of New Spain and were in the vanguard (that part of the army which goes ahead of the main body) of the Spanish army.

In the late 1700s, blacks comprised 25 to 30 percent of the Spanish Texas population. Due to the Spanish environment, Africans were referred to as Negroes which is the Spanish term for black. Since few Spaniards were slaveholders, many blacks were socially accepted and worked in skilled trades or professions as carpenters, domestic workers, farmers, blacksmiths, landholders, miners, shoemakers, teachers, merchants, and wagoners. Interracial marriages were not uncommon; however, blacks were not allowed to hold government positions.

During the time that Texas was under Spanish control, free blacks settled in the San Antonio area and in East Texas. In the early 1800s, Texas was opened to immigration and many settlers from the United States brought slaves who helped develop the land in East Texas as well as around the Brazos and Trinity rivers. After the Civil War and emancipation, many African Americans settled in Central Texas; however, the largest percentage of them remain in East Texas.

The war for Texas' independence began in 1835 and there was a great need for volunteers in the Texas army. African Americans, Anglo Americans, and Mexican Americans responded and fought together with Mexican Texans against Santa Anna and his troops. Famous blacks who fought in the Texas army included Hendrick Arnold, Greenbury Logan, Samuel McCullough, Jr., and Joe Travis.

One of these famous men, Hendrick Arnold, played an important role in the Texas Revolution. Arnold was a scout for the Texan Army, but posed as a runaway slave and infiltrated Mexican camps. Arnold briefed William Travis at the Alamo and delivered information to Sam Houston that proved instrumental in winning the Battle of San Jacinto.

William Goynes moved to Texas in the late 1820s and settled near Nacogdoches. Goynes became wealthy through his blacksmith shop and acquired land, owned a boarding house, raised cattle, ran a wagon train to Dallas, and was a horse trader. He served as an envoy for Sam Houston during the war for Texas' independence.

In September of 1863, the Emancipation Proclamation was issued by President Lincoln stating that all slaves were to be free people effective January 1863. The news did not reach Texas until several months after the war ended in April of 1865. General Gordon Granger read the Emancipation proclamation in Galveston on June 19, 1865. African-American Texans celebrate this date as ***Juneteenth*** with festivities that include parades, music, dancing, speeches, and picnics.

After emancipation, many African Americans continued their occupations as cooks in Southern homes. However, when cooking for themselves, they often ate the inexpensive parts of animals such as chitterlings (the small intestines of pigs), pigs' feet, hog jowl, and organ meats. Inexpensive and readily available foods such as potatoes, sweet potatoes, breads, black-eyed peas, wild greens, hominy grits, rabbit, and squirrel were common ingredients in their meals. As with other cultural groups, methods of preparing food have been handed down from generation to generation.

GERMAN TEXANS

Germans were the largest group of Europeans that immigrated to Texas. They bought lands from railroad companies, former plantation owners, and frontierspeople who were moving to the area that is now West Texas. Today, German Texans are the fourth largest ethnic group in the state.

The first German town in Texas, Liberty, was founded by Friedrich Ernst in 1838. Ernst was a successful tobacco grower, and planned to open a cigar factory that would provide job opportunities for German residents. He encouraged Germans to settle there by writing about Texas' rich land, political freedom, unlimited opportunities, and favorable climate in letters to German individuals and articles for German newspapers. Ernst soon became known as "The Father of German Immigration in Texas," and Liberty became a popular stopping place for German immigrants who were traveling to their new homes in the interior of Texas.

Two other Germans established towns that still exist today: Prince Carl of Solms-Braunfels established the town of New Braunfels and a port at Carlshafen. Carlshafen was later named Indianola and served as a port of entry for German immigrants. John Meusebach founded the town of Fredericksburg.

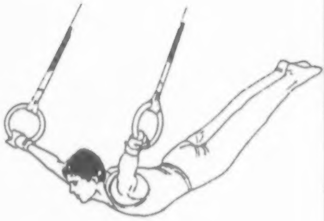
Many German traditions are still honored by the descendants of the early German immigrants. The Easter Fires Pageant is a tradition that stems from the Fredericksburg settlement and Meusebach's treaty with the neighboring Comanches. Meusebach met with the Comanches in the hills near Fredericksburg the night before Easter in 1847 to finalize the terms of a peace treaty. The Comanches posted guards in the hills during the meeting and built fires that were to serve as signals in the event that Meusebach and his group tried to trick them. Legend says that a woman tried to comfort the scared children of Fredericksburg by telling them that the fires were built by the Easter rabbits for cooking Easter eggs. The citizens of Fredericksburg reenact the story every year in the Easter Fires Pageant.

Many Christmas traditions such as Christmas carols (Stille Nacht or Silent Night) and Christmas trees were brought to the United States by German immigrants. In Germany, people cut fir trees in the forest, brought them home, and decorated them with candles, sugar cookies, silver-papered nuts, and glass ornaments. The adults would decorate the trees on Christmas Eve behind closed doors, and after a simple supper, the father would light the candles and Santa Claus would leave presents unwrapped under the tree. A small bell would ring, meaning that Santa had left, and the door would open for the children to come see the tree and their presents. This tradition was continued by German immigrants in Texas; however, families used cedar trees because there were no fir trees in Texas.

The Germans had many celebrations, or fests. Older fests include ***Saengerfests*** (singing fests) and ***Schutzenfests*** (shooting fests). A newer fest, ***Wurstfest***, is an annual ten-day fall festival in New Braunfels which began in 1961 to celebrate German food and tradition brought to the area by settlers in the 1840s. The ***June Berges Fest*** in Boerne and the ***Brenham Maifest*** in Brenham offer sausage, kraut, pretzels, pumpernickel bread, ice cream, music (oompah bands), dancing, craft shows, and parades.

CZECH TEXANS

Most of the early Czech immigrants were farmers and settled in central Texas. They wanted to keep their language which is currently the third language spoken in Texas following English and Spanish. Reading clubs became common among fellow immigrants to share books written in Czech, and Czech newspapers were used in Czech schools to help teach reading. The first Czech Texan newspaper was established at La Grange in 1879.



Sokol, a Czech word for falcon, is an organization where members were taught physical fitness in the form of gymnastics, Czech history, and Czech culture. Their motto was "A Sound Mind in a Sound Body." While under foreign rule, Czechs were forbidden to have cultural, political, or social organizations, but they were allowed the gymnastics societies. Several Sokols still exist in Texas which are clubs where families can visit, dance, learn gymnastics, and learn about Czech history and culture.

Many of the traditional Czech customs have been altered or have disappeared, but most of the traditional Czech foods have remained and Czech festivals. The ***Ennis Polka Festival*** is held in May and offers dancing to polka music and traditional Czech food including sauerkraut, potatoes, soups, pork, and kolaches (pastries) with a variety of fillings. Another festival is held at Praha, between Flatonia and Schulenburg, in mid-August and offers traditional food, dancing, and a carnival. The towns of West and Caldwell are also famous for their kolaches.

POLISH TEXANS

In 1854, one hundred and fifty Poles landed at Galveston, made their way into central Texas, and established the first Polish colony. Panna Maria, near San Antonio. The oldest Polish church and school in the United States still remain in this village where many Polish people still live today. Polish immigrants also established the towns of White Deer, Bandera, Chappell Hill, and Navasota and in the 1870s, Bremond became the headquarters for extensive Polish immigration to Texas. Although most of the Polish immigrants were farmers, Polish coal miners from Pennsylvania moved to the town of Thurber in 1886 to work in the coal mines. They then moved to Strawn after the coal mines were closed.

Polish Texans celebrate the Christmas season from Christmas Eve to Three Kings Day on January 6. On Christmas Eve, also known as Wigilia or ***Wilia***, the family gathers for a simple dinner when the first star appears in the sky. Depending on family preference, dinner usually consisted of fried herring, sauteed salmon, or perch covered with an egg or olive sauce.

Good wishes are exchanged, and then an oplatek is shared before the meal is eaten. The ***oplatek*** is a wafer or flat piece of bread with a Christmas picture pressed into it which symbolizes love, friendship, and forgiveness. After the Christmas Eve meal, someone plays the part of the Star Man, or Santa Claus, who distributes gifts, then everyone attends ***Pasterka***, the Midnight Shepherd's Mass.

FRENCH TEXANS

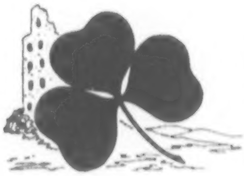
The old French culture remains intact among the descendents of the early French immigrants living in and around Castroville. The French culture and influence also has been enhanced by Cajuns who live in the Beaumont-Port Arthur area and in East Texas. ***Cajuns*** are natives of Louisiana who are descendents of the Acadian French immigrants. In the mid-1700s, Acadian French settlers immigrated to Louisiana from Acadia, a former French colony (1604 - 1713) off the coast of northeast America in the area that now includes Nova Scotia, New Brunswick, Prince Edward Island, and parts of Quebec and Maine. Cajuns speak a unique form of the French language called Cajun French which for many years was not written down, but passed verbally from generation to generation. When new words were needed for things such as electricity and cars, the Cajun French adapted words from the English, Indian, and Spanish languages, thus adding to the uniqueness of their own language.

French Texan celebrations have helped to maintain the traditions brought to Texas by the early immigrants. L'Alliance Francaise is a club found in many college towns and large cities that sponsors activities to perpetuate the French language and customs. The club hosts the annual ***Bastille Day*** ball held on July 14 which is the French equivalent of the U.S. Fourth of July. Port Arthur also hosts an annual Crawfish Festival in July. It emphasizes the more recent French immigration trend of the Louisiana Cajuns who immigrated to Texas during both World Wars to work in defense-related industries. Thousands of people visit the festival to sample Cajun and Creole foods which are adaptations of French recipes applied to native foods such as gumbo, red beans and rice, and jambalaya.

IRISH TEXANS

The earliest record of the Irish in Texas was that of a Spanish army officer named Hugo Oconor who was known as 'The Red Captain' by the Native Americans because of his red hair. Oconor had joined the Spanish army and was transferred to Mexico, or New Spain, in 1763 where he served as interim governor of Mexican Texas and was a military coordinator for the Mexican army. Another Irishman, from Belfast, was Philip Nolan. He visited Thomas Jefferson in the late 1700s and returned with an expedition to build a fort between present day Waco and Fort Worth. Nolan and some of his men were later killed by the Spanish.

Since Mexican citizens were required to be Catholics, the Mexican government encouraged the immigration of Irish Catholics to Mexican Texas in the 1820s to an area along the Nueces River. The capital was named San Patricio de Hibernaig. Another group of Irish immigrants came to Texas in 1831, settling around the old Franciscan mission at Refugio. Soon, a number of Protestant Irish families came and settled in Staggers Point in present day Robertson county. As the settlement grew and the railroad was built, the name of the town was changed to Benchley, after the conductor of the first train to pass through the town.



The Irish settlers found that the food in Texas was quite different from their homeland foods, but soon adapted and incorporated cantaloupes, okra, peppers, sweet potatoes, and watermelons into their diets. Some adapted traditional foods included: beef and potatoes; boxty - a potato dish served on Halloween; soda scones - a teatime snack; and Barm Brack - a bread whose name means yeast loaf. This bread is baked with a gold ring in it, and the legend says that the individual who finds the ring is to be married within a year.

ITALIAN TEXANS

Prior to Texas' independence from Mexico, only a few individual Italians had settled in Texas, but Italian immigration to Texas greatly increased after the Civil War. In the 1880s, Italians arrived in organized groups and settled in Galveston, San Antonio, Bryan, Hearne, Houston, Dickinson, and near the Red River in Montague County. The coal mine town of Thurber in Erath County was also the site for many Italian immigrants until the mines closed in 1921.

One of the most significant contributions to Texas was made by an Italian named Adam Janelli. Janelli brought the Salvation Army to

Dallas in 1889, where he served as treasurer until his death. He was largely responsible for the construction of the Salvation Army Hall on Federal Street.

Wherever the Italian Texans settled, they formed their own organizations and maintained many of their homeland traditions. San Antonio is the site of an Italian parish, *San Francesco di Paola*, and the Christopher Columbus Italian Society. An important Italian tradition celebrates the Feast of St. Joseph who is the patron Saint of Italy. This celebration is held during Lent on March 19, so the foods are prepared without meat and include fish, pizza, and spaghetti, along with biscuits, cakes, pies, and vegetables.

The traditional foods brought to Texas by Italian immigrants which are still popular today include: ravioli, manicotti, lasagne, spaghetti, artichokes, biscotti (a basic Italian cookie), carrots, capers, cauliflower, eggplant, fennel, meatballs, spinach, string beans, and veal.

Today, very few Italian Texans still speak Italian, and the last Italian newspaper in Texas ended publication in 1962. However, there are many visible signs of the Italian culture in Texas. For example, fruits and vegetables are still grown by and purchased from descendents of the early Italian immigrants in Montague county. The Christopher Columbus Italian Society in San Antonio still attracts hundreds of Italian Texans as well as non-Italian Texans at its spaghetti dinners.

MIDDLE EASTERN TEXANS

The cradle of civilization began in the Middle East centuries ago. The religions of Christianity, Islam, and Judaism began in this region and the countries of Egypt, Saudi Arabia, Turkey, Syria, Iraq, Iran, Lebanon, Israel, and Jordan are considered to be the center of this area. The majority of immigrants that came to Texas from the Middle East were Lebanese and Syrians.

A significant number of Arabic-speaking immigrants from the areas of Mount Lebanon and Greater Syria (present day Lebanon and Syria) began arriving in Texas in the early 1880s, most of these early immigrants were Christians, but Moslems began immigrating to Texas after 1945 due to conflicts in the Middle East. The census of 1920 reported that approximately thirty-five thousand Syrians and Lebanese were living in Texas, and today there are ten to fifteen thousand who can trace their ancestry to Syria and Lebanon.

Many of the Lebanese and Syrian immigrants settled in and around Austin, Houston, San Antonio, El Paso, Tyler, Canadian, and Port Arthur. They typically went from place to place selling small goods, and then opened businesses. The Jamails of Houston are the largest Lebanese family in Texas. They entered the produce business, and operated the *Jamail Brothers Food Market*; however, the name has been changed to *Jim Jamail and Sons Food Market*, which is now an exclusive gourmet food store in the United States.

Another Lebanese family, the Abraham Kazen family, settled in the Laredo area. After selling dry goods between San Antonio and Laredo, they expanded their operation up and down the Rio Grande River and eventually opened stores in San Marcos and Benavides.

Some of the ingredients basic to all Middle Eastern foods include garlic, eggplant, olive oil, green pepper, lemon, and tomato. Both Judaism and Islam forbid their followers to eat pork; however, Middle Eastern Christians eat pork meat and its products. Lamb is the primary meat, but beef and camel also are eaten. Other food of Middle Eastern countries include yogurt, olives, wheat, beans, rice, lentils, and chickpeas. A variety of seasonings are also used including allspice, cinnamon, cardamom, coriander, cumin, ginger, and hot peppers.

Syrian and Lebanese immigrants and their descendants still celebrate their ancient traditions in a number of ways. Traditional dishes have reached a wide audience through festivals held in Austin, Beaumont, El Paso, Houston, San Antonio, and Waco. A traditional social gathering called a sahria still takes place in churches, clubs, and homes throughout Texas. Sahrias provide an experience of ethnic heritage which includes food, dabke, a Lebanese circle dance, and music provided by a band of native instruments such as an oud (lute), a derbukki (hand drum), and the tambourine.

ASIAN TEXANS

Asian Americans make up the fastest growing ethnic group in the United States. Asians are people who have origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands which include China, Japan, the Philippine Islands, Vietnam, Cambodia, Laos, and Korea. Although Asian Americans are studied as a group, it is important to remember that this population is probably the most diverse minority group in the United States. Asian Americans come from more than twenty-four different countries and cultures and do not share a common language.

Chinese immigrants came to Texas in the 1870s primarily as railroad workers and settled in Calvert in Robertson County and in El Paso. A new wave of Chinese immigration occurred during the communist takeover of China in the late 1940s. Most of these immigrants were well educated and included engineers, college professors, and doctors. Immigration has continued with the new arrivals settling principally in Houston which now has one of the largest percentages of Chinese in Texas and the United States.

Chinese restaurants are popular among many ethnic groups across the state. An old Chinese proverb says that 'food should smell appetizing as it is brought to the table, it must have harmonious color combinations, it must sound pleasing as it is being eaten, and it must taste delicious.' Special ingredients that make Chinese dishes so unique include fermented black bean, ginger root, Chinese peppercorns, garlic, scallions, hot pepper, star anise, soy sauce, water chestnuts, sugar, bean sprouts, bamboo shoots, Chinese pea pods, monosodium glutamate (MSG), and sesame seed oil.

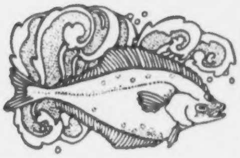
Chinese restaurants also reflect the diversity of food preparation methods of different areas of China. For example, Szechwan dishes use hot pepper, Cantonese dishes use more sweet-and-sour flavorings, Shanghai dishes are prepared well done, Shantung dishes use more onion and garlic, Maritime dishes use salty seafoods, and Cantonese dishes are cooked for a short period of time to retain the natural flavors. Most Chinese foods are cooked in a wok (frying pan) or a metal bowl that is wide at the top and narrow at the bottom.

Traditional holidays and customs are still observed by some Chinese Texans although they have been modified over time. The celebration for ***Chinese Lunar New Year*** begins on New Year's Eve day when men traditionally settle all of their debts and the doors of the houses are sealed with red (the color of happiness and good fortune) paper which is not broken until early the next morning. Gifts and ceremonial greetings are exchanged at one second after midnight, and children receive gifts of money in red envelopes.

Another tradition, the ***Red Egg Party***, commemorates the first cutting of a baby's hair when he or she is one month old. After the hair has been cut, a red egg is rubbed on the baby's head for good luck. Red eggs also are given to the guests as favors. Other Chinese traditions such as fireworks on the Fourth of July, have become a part of American tradition This event originated when the Chinese introduced fireworks in San Francisco during celebrations for California's admission to the United States in 1850.

In contrast to Chinese immigration, Japanese immigration to Texas was very limited. The first known Japanese immigrant to Texas was a man called Tsukahara, a farmer who settled in Dallas county in the 1880s. His brother, a physician, immigrated later to the same area. This was a typical trend of the Japanese immigrants—the first settlers were farmers, and later immigrants were professionals settling in large urban areas. In the early 1900s, the Japanese emperor encouraged emigration from Japan due to food shortages. Several colonies of Japanese were established in the Rio Grande Valley area including Brownsville (1913), Mission, Harlingen, and San Benito. A colony in Webster, near Houston, was headed by Saito Saibara whose rice crops were a great boost to the local economy. By 1920, only five hundred Japanese Texans were listed with the national Japanese Association.

Rice is the most important crop grown in Japan where more than half of the available tillable land is used for the production of rice. The remaining land is used to grow barley, rye, soybeans, sweet potatoes, and wheat. On the hillsides of Japan, a variety of fruits and vegetables are grown which include mandarin oranges, peaches, pears, cherries, apples, persimmons, beans, cabbage, carrots, peas, squash, and onions. Japanese immigrants continued to use these food products when they came to Texas and also adapted other locally available products.



Traditional Japanese foods are still served in the homes of Japanese Texans where the presentation of the food is just as important as the preparation. Rice is served with each meal just as traditional American meals serve bread. Since seafood provides most of the protein in the Japanese diet, traditional dishes typically include sashimi (raw fish) or sushi (raw or cooked fish with rice) along with rice, vegetables, tofu (soybean cake), and hot tea.

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

- Identify the location of your heart.
- Discuss the importance of taking care of your heart.

ACTIVITIES & STRATEGIES

Using a small drum, or another type of rhythm instrument, make a steady beating noise that sounds like a heartbeat *(ba-bum, ba-bum, ba-bum).*

As the students gather around, ask them if the beat reminds them of anything that might make such a sound. Give some hints as you continue to keep the beat.

- Everyone of us has one.
- It is part of our bodies.
- It is inside our chests.
- We cannot live without it.
- It could stop working if it is not taken care of properly.

If none of the students have guessed *the heart*, then tell them.

Continue to beat the drum, and say *ba-bum* as you tap the rhythm. Ask the students to say it with you or clap to the rhythm.

Put the drum down, and ask the students to make a fist. Tell them to squeeze and relax their own fists as you demonstrate with yours. Add the *ba-bum* sound as you demonstrate.

Ask the students to hold their fists to the center of their chests as you hold your fist to your chest. Tell the students that their own hearts are approximately the size of their own fists. Tell them that their hearts are inside their chests near where they have placed their fists.

Tell the students that our hearts pump blood throughout our bodies, and it is very important that we take care of our heart. One way is to exercise our bodies, and another way is to eat food that does not have very much fat, salt, or sugar in it.

Demonstrate the song and distribute a copy of the song to each student. Ask them to take it home and share the song with their families.

RESOURCES & MATERIALS

Handout: "Eat Right! Be Bright"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Audiocassette of heart songs, American Heart Association, Box 15186, Austin, Texas 78761

Drum and stick or other percussion instrument

TEACHER TIP

Write a note to the parents or guardians, encouraging them to learn the song, "Eat Right! Be Bright!," and to sing it with their child.

ESSENTIAL ELEMENT

Fine arts. Music. Singing concepts and skills. The student shall be provided opportunities to create vocal sounds by imitating; and sing songs.

NAME ______________________________ DATE ________________

Eat Right! Be Bright!

(Sing to the tune of *London Bridge is Falling Down*)

(Child's name) wanted fish to eat,
Fish to eat, fish to eat,
(Child's name) wanted fish to eat,
So this is what he/she did.

He/she asked his/her mother what to do,
What to do, what to do.
He/she asked his/her mother what to do,
And this is what she said.

Fish is very good for you,
Good for you, good for you.
Fish is very good for you,
Eat right! Let's have baked fish.

(Add the rhythm instrument)

(Child's name) wanted candy to eat,
Candy to eat, candy to eat.
(Child's name) wanted candy to eat,
And this is what he/she did.

He/she asked his/her mother what to do,
What to do, what to do.
He/she asked his/her mother what to do,
And this is what she said.

Candy is not good for you,
Not good for you, not good for you.
Candy is not good for you,
Be bright! Have some fruit instead.

Variation: Father can be asked as well as mother. Substitute any heart-healthy food (foods containing low fat, salt, or sugar). Sing other verses, choosing juice instead of a soft drink, raisins over bite-size candies, oatmeal instead of a doughnut, popcorn over potato chips, grapes instead of a lollipop, and pretzels rather than corn chips.

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

Demonstrate daily practices that promote oral and nutritional health.

ACTIVITIES & STRATEGIES

To introduce the activity, ask the questions in the opposite column.

Use a plastic model of teeth to demonstrate the cutting, tearing, and grinding teeth. Explain that each tooth has a special job to do. Point out that each student has 20 baby teeth that will fall out, and these teeth will be replaced by 32 adult teeth.

Explain that tooth decay or cavities may be caused by sugar forming an acid that eats holes in the surface of the tooth, causing decay. This decay, or hole, gets bigger if it is not repaired and causes a cavity. Discuss the importance of choosing foods to keep teeth healthy.

Use a plastic teeth model and demonstrate proper tooth brushing; make small circles on each tooth and brush away from the gums. After tooth brushing is finished, then the tongue should be brushed and the mouth rinsed.

Tell the students to brush their teeth with a pretend tooth brush.

Conclude that if we keep our teeth clean (show toothbrush and toothpaste), eat nutritious foods (show plastic or real fruit), get plenty of exercise (jog in place), and rest (pretend to sleep), our bodies will be healthy and strong.

Instruct the students to complete the worksheet, "Brush and Beam." They may glue black-eyed peas into the mouth to represent teeth that have not been brushed and glue white beans into the mouth to show healthy, clean teeth that have been brushed.

RESOURCES & MATERIALS

Worksheet: "Brush and Beam"

Plastic teeth model
Toothbrush
Toothpaste
Plastic or real fruit
Glue
Dried black-eyed peas
Small white beans

Questions for introduction:
How do turtles chew?
Answer: Ridges on the top of the mouth help them to chew.

Which ocean animal has two sets of teeth?
Answer: The shark has teeth that grow in a membrane that continues to grow out of its mouth. When these teeth wear out, they drop from the membrane and new teeth grow in place of the old ones.

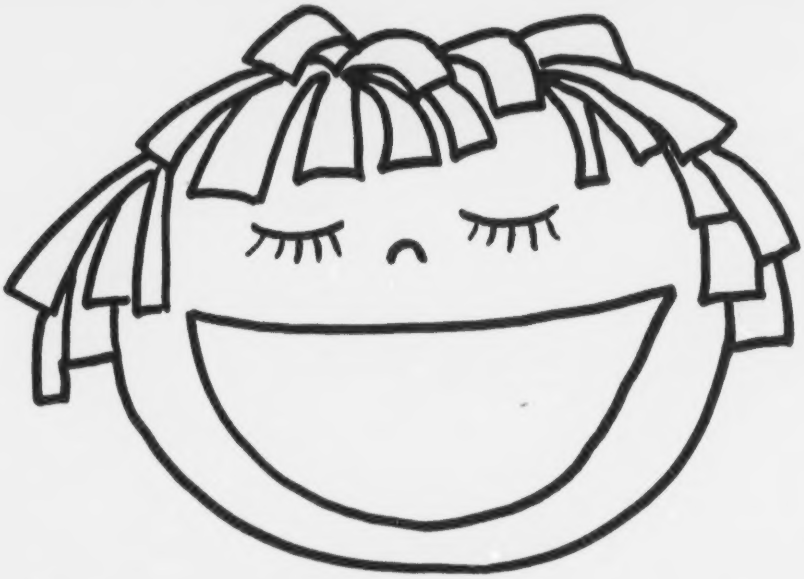
Can children keep growing new teeth like sharks?
Answer: No. We have only two sets of teeth. Baby teeth are replaced by permanent teeth.

ESSENTIAL ELEMENT

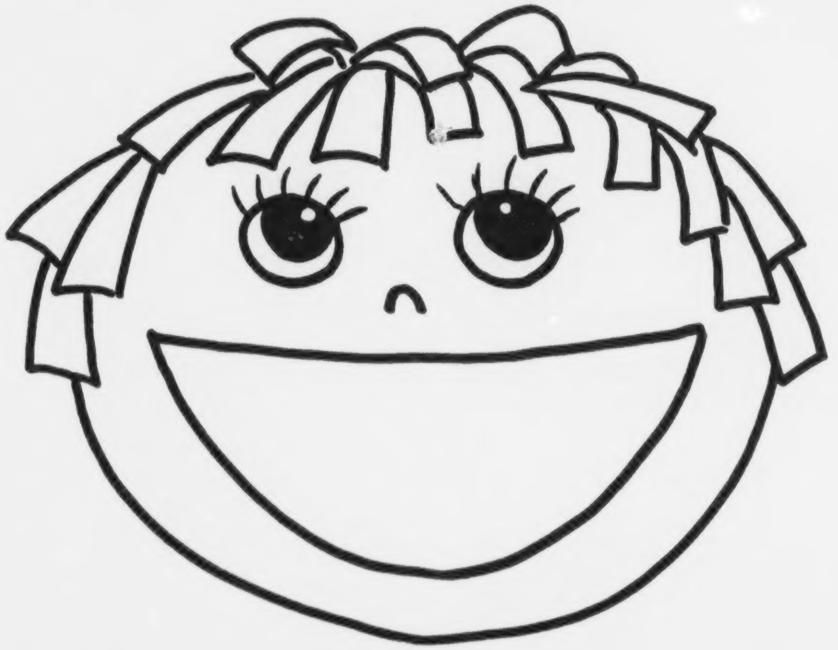
Social/emotional development. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to demonstrate self-help skills by being responsible for personal hygiene and recognizing routine healthy behavior.

NAME ______________________________ DATE ______________

Brush and Beam



I need to brush my teeth today!



I brushed my teeth today!

Health Prekindergarten

PK

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Explain the importance of safe handling of food.
- Explain the importance of breakfast.

ASSESSMENT CRITERIA

Demonstrate safe and healthy procedures in food preparation.

ACTIVITIES & STRATEGIES

Discuss good safety rules to use when preparing foods such as:
1. Wash hands before handling any food items.
2. Wash fresh fruits and vegetables before eating or using them in recipes.
3. Use ovens and cooktops only when supervised by an adult.
4. Sharp knives should be used by adults only.

Help the students prepare one of the suggested nutritious snacks from the handout, "Easy Children's Recipes."

Tell the students that each of the recipes would make nutritious breakfast foods.

Discuss the importance of eating a healthy breakfast each day. Supervise and reinforce safety rules as students work.

Make enough copies of the handout, "Easy Children's Recipes," for each student to take one home. Include alternate recipes from the *Children's Help Your Heart Cookbook* from the American Heart Association.

RESOURCES & MATERIALS

Handout: "Easy Children's Recipes"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Children's Help Your Heart Cookbook, American Heart Association

Ingredients and utensils necessary for the children to make the selected recipe

TEACHER TIP

- **If you want assistance with this activity, send a note to parents to request a volunteer helper.**
- **Tortillas can be softened with an electric griddle by the teacher or a volunteer.**

In advance, check with the cafeteria manager for assistance and to see if any of the ingredients can be provided.

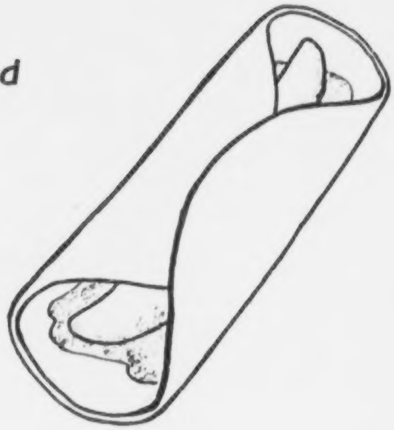
ESSENTIAL ELEMENT

Social/emotional development. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.

NAME ________________________________ DATE ________________

EASY CHILDREN'S RECIPES

1. Banana Wraps



- Soften a whole wheat flour tortilla and spread with peanut butter.
- Place a banana in the center of the peanut buttered tortilla.
- Wrap the tortilla around the banana.

Makes a great breakfast!

2. Peanut Butter Balls

1/2 C. peanut butter
2 1/2 Tbsp. nonfat dry milk
2 Tbsp. raisins
2 Tbsp. honey
Sesame seeds (optional)

- Mix all ingredients except sesame seeds.
- Form into balls.
- Roll in sesame seeds. Enjoy!

3. Ambrosia Salad

1 can pineapple tidbits
1 can mandarin oranges
1 cup miniature marshmallows
1 cup plain low-fat yogurt

- Drain the 2 cans of fruit.
- Combine all ingredients in a large bowl.
- Mix well. Chill.
- Enjoy!

LESSON OBJECTIVE

Develop positive attitudes about food.

ASSESSMENT CRITERIA

Identify a variety of foods that are nutritious.

ACTIVITIES & STRATEGIES

Discuss nutritious daily food choices in "Appendix C: A Pattern for Daily Food Choices," and show a picture of a food from each of the five food groups.

Designate an area on the floor or table for a "Good-For-You Lake." Make fishing poles by tying a piece of string to a pole and a magnet to the end of each string. Attach a paper clip to each food picture and place the food pictures in the "Good-For-You Lake." (Construction of the fishing poles and food pictures may be done prior to the activity.)

Instruct the students to take turns fishing for nutritious foods. Ask each student to identify and describe the *good-for-you* food he or she caught in the "Good-for-You Lake."

Enrichment: Display the "Good-For-You Lake" poster and tell the students to use their fingers to follow the fishing lines to see who caught each nutritious foods

RESOURCES & MATERIALS

Teacher Resource: "Good-For-You Lake"

"Appendix C: A Pattern for Daily Food Choices"

A poster-size picture of the "Good-For-You Lake" teacher resource

Pictures of foods from magazines, or a set of the cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, Illinois, 60018-4233 (708) 696-1860, Ext. 220

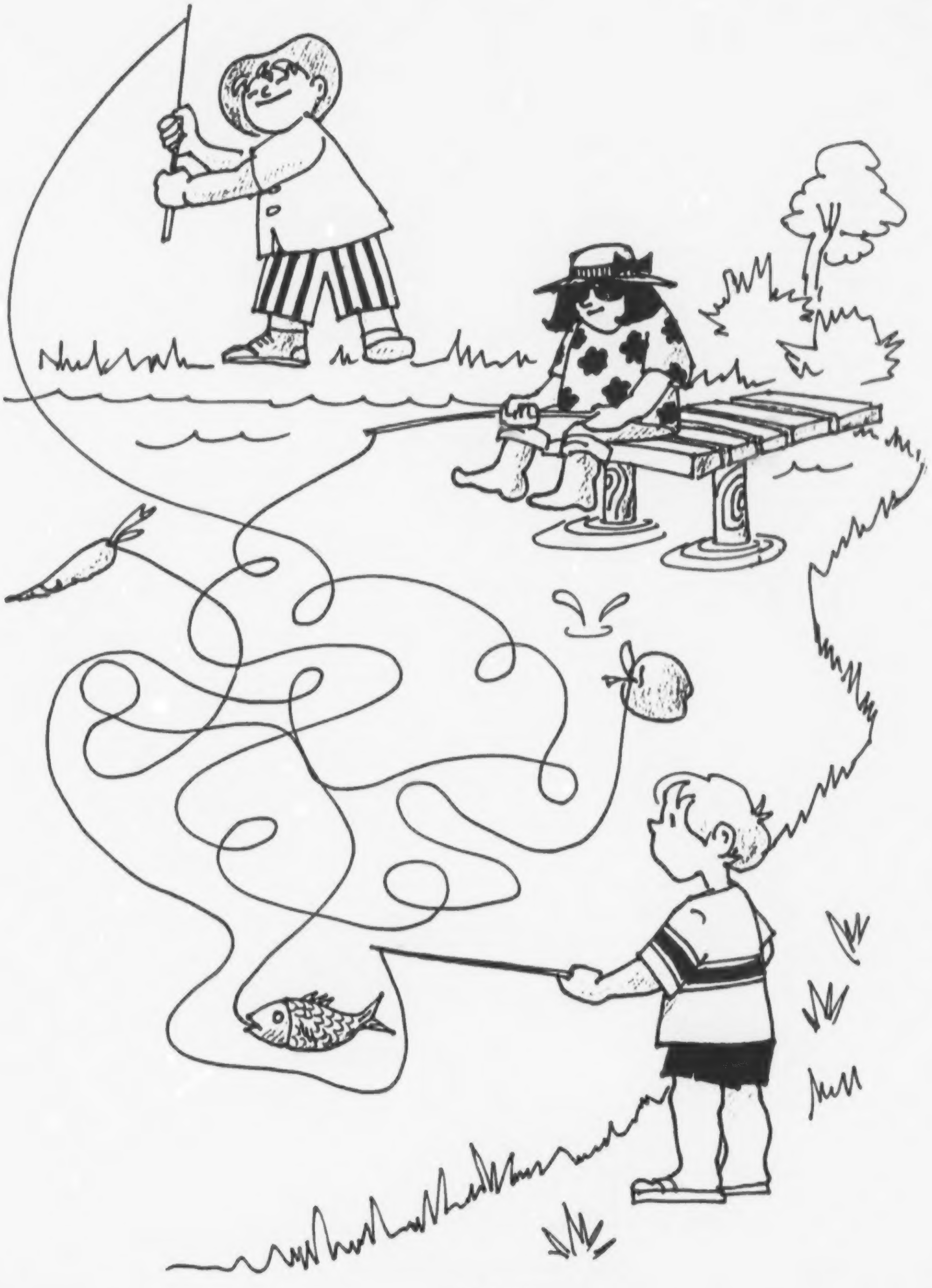
24" dowels or other fishing pole material
12" pieces of string
Small magnets
Paper clips

ESSENTIAL ELEMENT

Motor development. Skills related to games and sports. The student shall be provided opportunities to participate in cooperative games.

NAME ______________________________ DATE ______________

Good-For-You Lake



LESSON OBJECTIVE

Identify different foods.

ASSESSMENT CRITERIA

- Identify names of various fruits and vegetables.
- Describe each food.

ACTIVITIES & STRATEGIES

Show examples of fruits and vegetables to students and give students opportunities to name them.

Repeat examples again, asking the students add to add color words and one other descriptive word, for example, *juicy, red tomato or shiny, purple grapes.*

Ask the students to help you describe the different fruits and vegetables in a sentence using many descriptive adjectives such as:

- *Juicy red tomatoes grow on fuzzy green vines.*
- *Shiny purple grapes make good juice.*

Have a tasting party using some of the foods described.

RESOURCES & MATERIALS

"Project TEACH," Texas Department of Agriculture

Real fruits and vegetables

TEACHER TIP

Use examples of shiny or dull, juicy or dry to reinforce the vocabulary.

In advance, ask the cafeteria manager to provide a variety of fruits or vegetables and to assist with the tasting party.

ESSENTIAL ELEMENT

Communication development. Speaking (expressive language). The student will be provided opportunities to talk about what is seen, heard, touched, tasted, or smelled as objects, people and events are experienced.

Language Arts Prekindergarten

PK

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

Identify a variety of foods for growth, energy, and good health.

ACTIVITIES & STRATEGIES

Discuss food as a source of nutrients needed for growth.

Explain that eating a variety of foods will help students grow and have energy and good health. The body needs different foods such as milk, meat, fruits, vegetables, breads, and cereals.

Read or tell the "Baby Bite" story as the students participate in nonverbal communication through facial expressions.

Ask the students to make their faces express Jenny's reaction to eating the apple.

Serve each student a "baby bite" of a fresh apple. Use several different varieties of apples.

Conclude with the following instructions:
Today, when you eat lunch and are served a new food on your plate, try a baby bite. After trying the baby bite of the new food, you may find that you like it!

It is important to eat many different foods to get the nutrients needed for growth, energy, and good health.

RESOURCES & MATERIALS

Teacher Resource: "Baby Bite"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

One fresh apple bite for each child

TEACHER TIP

While the students are tasting the different varieties of apples, videotape their expressions and replay.

ESSENTIAL ELEMENT

Communication development. Speaking (expressive language). The student shall be provided opportunities to participate in nonverbal communication through gesture, pantomime, and facial expression.

NAME ______________________________ **DATE** ____________________

Baby Bite

Once there was a little girl named Jenny. She was one year old. One day, her mother gave her a baby bite of fresh apple and she made a funny face.

(Children make a funny face.)

When Jenny was two years old, her father gave her a small bite of fresh apple and Jenny ate a small bite and looked surprised.

(Children make a surprised face.)

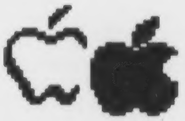
When Jenny was three years old, her baby sitter gave her a big bite of fresh apple. Jenny ate the big bite of fresh apple and frowned.

(Children make a frown.)

When Jenny was four years old, her teacher gave her a large bite of fresh apple. Jenny ate the large bite of fresh apple and smiled.

(Children make a smiling face.)

Jenny decided that she liked to eat fresh, crunchy, and nutritious apples!



LESSON OBJECTIVE

Develop positive attitudes about food.

ASSESSMENT CRITERIA

Demonstrate understanding of nutritious foods that help students grow.

ACTIVITIES & STRATEGIES

Prior to the activity, send a letter to parents requesting a baby picture of their child. Take photographs of each student or use a current school picture.

Show the students the pictures of themselves as a baby and as a prekindergarten student. Discuss how each student has changed.

Discuss the importance of eating a variety of nutritious foods that help each student grow. Discuss specific foods.

Ask the students the following questions:
- What did the baby need to grow into a person like you? (food, milk, and juice)
- Will you grow more? (yes—show how you will grow)
- What will keep you growing? (nutritious food, exercise, and rest)

Display the photographs on a bulletin board. Arrange the baby pictures as a flower and the current pictures across the bottom of the display.

Measure each student's height and compare their birth length to their current height.

Discuss similarities and differences.

RESOURCES & MATERIALS

Teacher Resource: "Letter to parents requesting baby pictures"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Current photographs of the students

TEACHER TIP

Be aware of students with physical disabilities or students who may not have baby pictures.

ESSENTIAL ELEMENT

Communication development. Listening (receptive language). The student shall be provided opportunities to respond to simple directions, commands, and questions.

Date ____________________

Dear Parent,

Our prekindergarten class will be learning about the importance of eating foods that help our bodies grow.

One of our activities will involve the use of baby pictures of the students in the class. Please send a baby picture of your child by ____________________. Please write your child's name on the back of the picture. Also, please write the length of your child at birth on the back of the picture.

The picture will be returned at the end of the lesson. Thank you for your cooperation.

Sincerely yours,

____

Prekindergarten teacher

LESSON OBJECTIVE

Name the sources of food.

ASSESSMENT CRITERIA

- Identify the source of an egg.
- Identify eggs in different forms.

ACTIVITIES & STRATEGIES

Display eggs in different forms using pictures, filmstrips, or eggs prepared in different forms.

Allow students to tell about their favorite egg dish and how the dish is prepared. Discuss the following information:
- Point out the parts of the egg.
- Explain that eggs are a good source of protein which helps the students to grow.
- Caution students that no one should ever eat raw eggs.
- People should limit the number of eggs they eat each week.

Prepare scrambled eggs for the class.

Lead a class discussion while preparing the scrambled eggs by asking the following or similar questions.
- Where do eggs come from?
- Name other sources of eggs. (ducks, geese, ostriches, and turkeys)
- What are some other ways eggs are used? (bread, cakes, and cookies)

Put a small amount of the scrambled eggs on a plate to use in an egg comparison. Spoon the remaining scrambled eggs into small cups and distribute them with spoons for the students to taste.

Conduct an egg comparison using the scrambled eggs, a boiled egg, and a raw egg. Cut the boiled egg in half. Crack one egg in a bowl. Point out the difference of each egg form. Discuss how the eggs change when they are cooked?

Teach the students the nursery rhyme, "Humpty Dumpty." Ask students these questions: What is Humpty Dumpty? Can they put him back together? Why?

Give each student the "Humpty Dumpty Puzzle" to color; cut out the squares, and put Humpty Dumpty together again. This activity could be expanded by reading *Chickens Aren't the Only Ones*, by Ruth Heller.

RESOURCES & MATERIALS

Worksheet: "Humpty Dumpty Puzzle"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Pictures of eggs in various forms
Electric skillet
Spoon for cooking scrambled eggs
Small cups (4 oz.)
Plastic spoons
One boiled egg
One dozen uncooked eggs
Spray oil

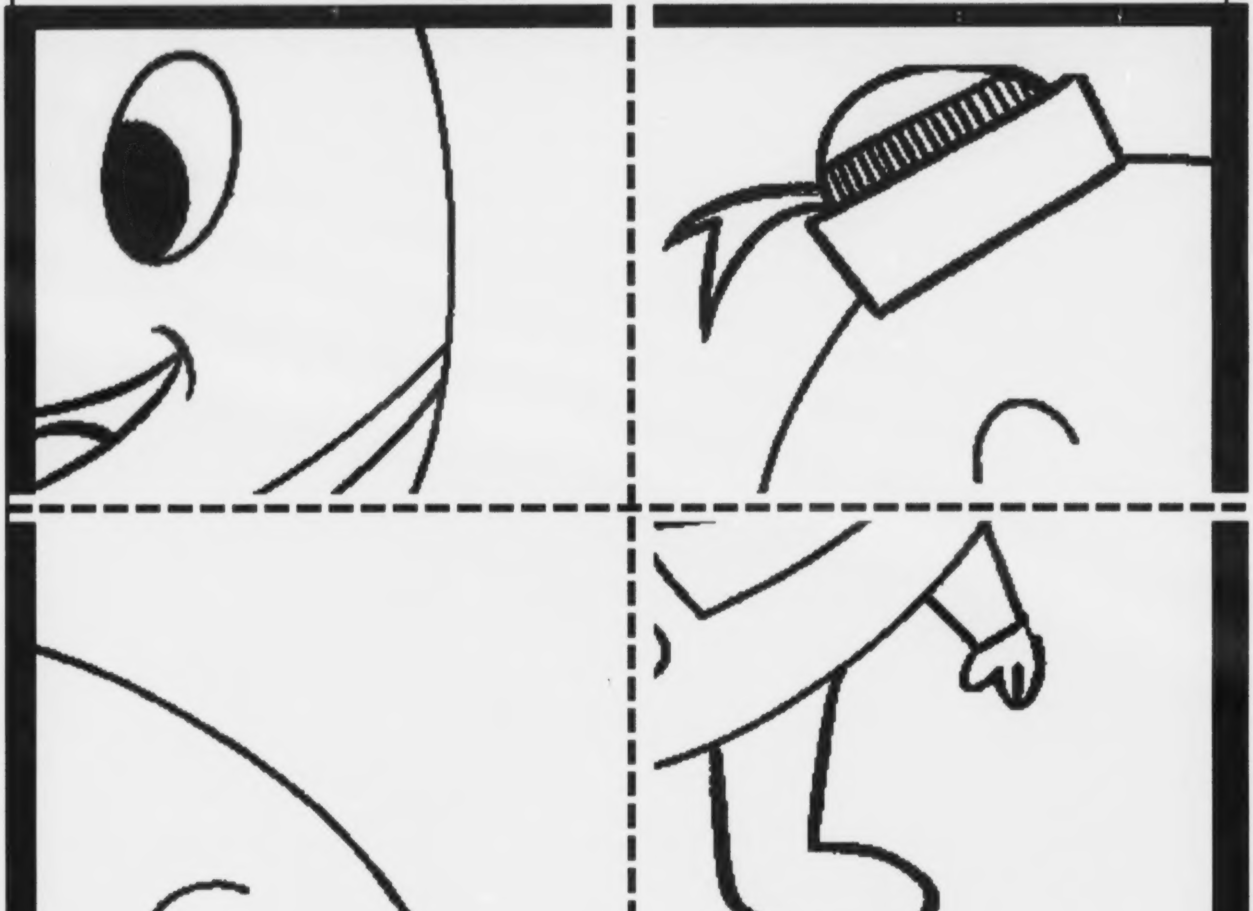
In advance, check with the cafeteria manager about obtaining the eggs from the cafeteria.

ESSENTIAL ELEMENTS

Cognition development. Comparing and contrasting. The student shall be provided opportunities to compare similarities and differences among objects using taste, smell, touch, sight, and sound (science).
Communication development. Speaking (expressive language). The student shall be provided opportunities to retell a familiar story or nursery rhyme.

NAME ______________________________ DATE ______________

Humpty Dumpty Puzzle



Cut out the squares and put Humpty Dumpty together again.

ESR IV

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

Recognize eggs as a healthy food choice.

ACTIVITIES & STRATEGIES

Explain that eggs contain protein which the students need for health and wellness.

Tell the students that they will make "Egg Snacks" from hard-cooked eggs. Ask them if eggs come from plants or animals; then show them a picture of a hen.

After the students wash their hands, give each student:
- a resealable plastic bag
- a knife
- a hard-cooked egg
- 1 - 2 tsp. low-fat mayonnaise

Instruct each student to complete the following steps:
1. Peel the egg.
2. Cut the egg in half lengthwise.
3. Put the yolk in a resealable plastic bag.
4. Mix 1-2 teaspoons of mayonnaise with the yolk in the plastic bag. Seal the bag and mash the yolk and mayonnaise together.
5. Snip the corner of the bag and squeeze the mixture into the egg halves.
6. Eat!

After the students have eaten their egg snacks, ask the following questions:
- What color are eggs on the outside?
- What color are eggs on the inside?
- From what animal do eggs come? (Show pictures of the hen, a duck, a turkey, and/or a turtle.)
- Why are eggs a wise food choice to help you stay healthy and well? (Eggs are nutritious. They contain nutrients to help you grow.)

Make copies of the "Egg Snacks" recipe and send a copy home with each student to encourage the family to help the student practice motor development skills at home.

RESOURCES & MATERIALS

Handout: "Egg Snacks" recipe

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Children's Help Your Heart Cookbook, American Heart Association

Pictures of:
- a hen
- a duck
- a turkey
- a turtle

Resealable plastic bags
Plastic knives
Hard-cooked eggs
Low-fat mayonnaise

TEACHER TIP

Broken egg shells can be saved to make egg shell collages.

ESSENTIAL ELEMENT

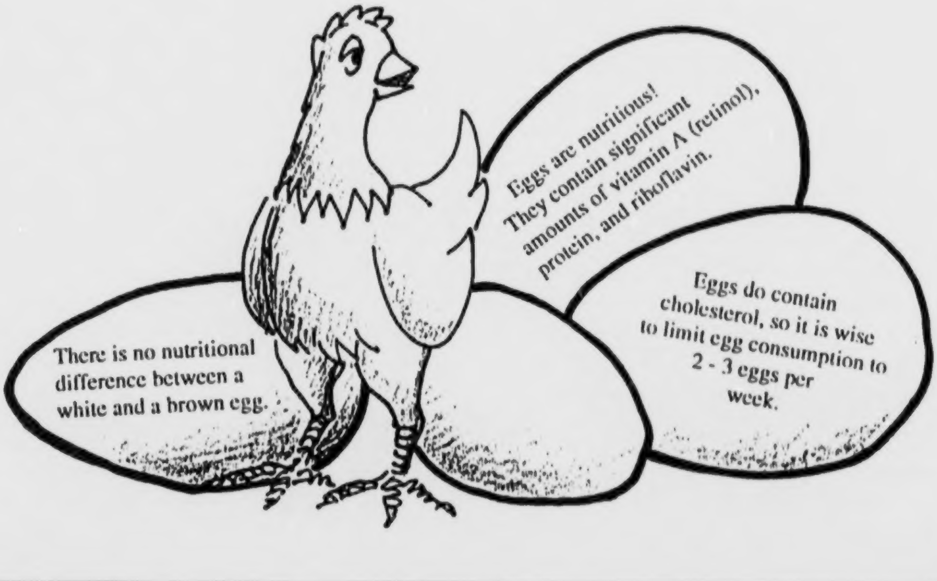
Cognition development. Comparing and contrasting. The student shall be provided opportunities to demonstrate concepts of part and whole with manipulative materials (mathematics.)

NAME ______________________________ **DATE** ____________________

Today in school, I made "Egg Snacks."
Could we make some at home, please?
Here is the recipe.

EGG SNACKS

1. Place eggs in a saucepan and add enough cold water to the pan to cover the eggs by one inch (2.54 cm.). Cover the pan with a lid. Bring the water to a boil and then remove the pan from the heat. Let the eggs remain in the hot water for 20 minutes.
2. Remove the eggs from the saucepan and cool quickly in cold water.
3. Peel the eggs and cut each egg in half lengthwise.
4. Remove the yolks and mash them with a fork or in a resealable bag.
5. Add one to two teaspoons (5 to 10 mL) of low-fat mayonnaise to the mashed yolks and mix well.
6. Squeeze from a cut corner of the resealable bag or spoon the egg yolk mixture into the egg white halves and eat!


Eggs are nutritious! They contain significant amounts of vitamin A (retinol), protein, and riboflavin.
Eggs do contain cholesterol, so it is wise to limit egg consumption to 2 - 3 eggs per week.
There is no nutritional difference between a white and a brown egg.

LESSON OBJECTIVES

- Discuss nutritional needs of four, five, and six year olds.
- Make wise food choices at snack time.

ASSESSMENT CRITERIA

- Identify vegetables and fruits that are nutritious.
- Construct a nutritious snack.

ACTIVITIES & STRATEGIES

Explain that hard and crunchy vegetables and fruits help clean the teeth as they are chewed. They can be called vegetable and fruit tooth brushes.

Explain to the students that vegetables and fruits are very nutritious and that they need to eat several servings every day.

Show the students an example of a vegetable and fruit funny face snack and tell them they will make one and eat it, too.

Wash your hands and show the students how to make a funny face on a cracker.

Tell the students to wash their hands. Give each student a paper plate with the ingredients and supervise as they construct their own "Vegetable and Fruit Funny Face."

Display the finished products, then allow them to eat their nutritious snacks.

Science **Prekindergarten**

PK

TEXAS EDUCATION AGENCY

RESOURCES & MATERIALS

Teacher Resource: "Vegetable and Fruit Funny Face"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

For each student:
A plastic knife
A paper towel
A paper plate
Large crackers
Shredded carrots
2 large green peas
Raisins
Peanut butter
A green or red grape

TEACHER TIP

Although vegetables and fruits act as tooth brushes, remind the students that they still need to brush with a real tooth brush.

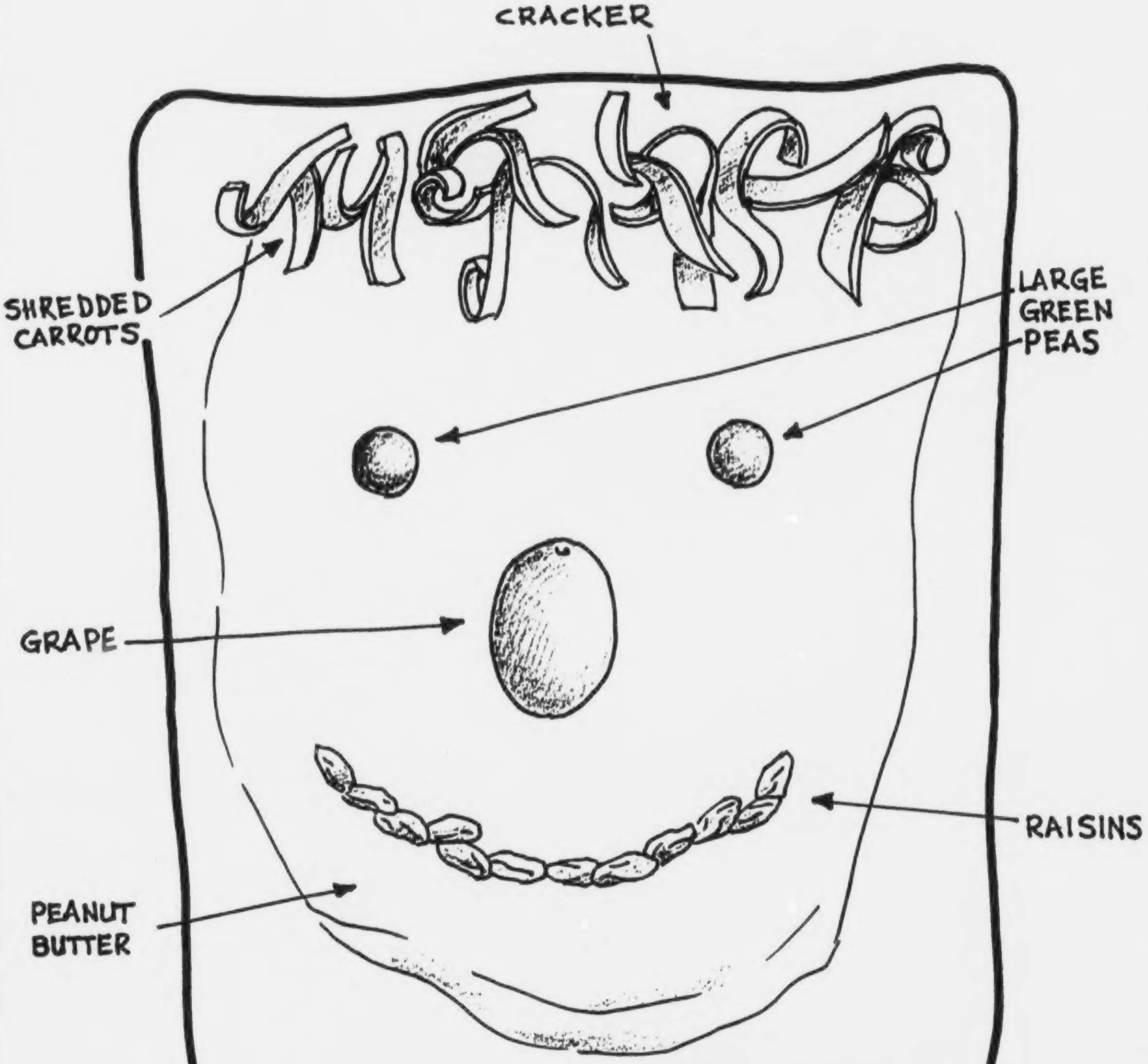
In advance, ask the cafeteria manager to provide vegetables and fruits for this activity.

ESSENTIAL ELEMENT

Motor development. Perceptual awareness skills. The students shall be provided opportunities to develop eye-hand coordination.

NAME ______________________________ DATE ____________

VEGETABLE AND FRUIT FUNNY FACE


CRACKER
SHREDDED CARROTS
LARGE GREEN PEAS
GRAPE
RAISINS
PEANUT BUTTER

LESSON OBJECTIVE

Identify foods in different forms using all five senses.

ASSESSMENT CRITERIA

Identify foods using the sense of smell.

ACTIVITIES & STRATEGIES

To introduce the "Mystery Food Smells" activity, ask students to point to the part of their face that they use to smell food.

Explain to them that they will be smelling several mystery foods and will be guessing the name of the food.

Work with the cafeteria manager to obtain food supplies for this activity. Some foods appropriate for smelling are lemons, oranges, peaches, popcorn, onions, cinnamon toast, banana, and peanut butter.

Place food samples in separate small containers and cover each one with foil. Punch holes in the foil to allow the aromas to escape.

Ask the students to sit in a circle and pass around one food, letting each student smell it. After every student has had a chance to smell it, ask them to describe and guess the food. Then show the food to everyone. Continue with the next food.

RESOURCES & MATERIALS

Foods appropriate for smelling
Small containers
Foil lids

In advance, ask the cafeteria manager to provide some foods and ask for assistance in organizing this activity.

ESSENTIAL ELEMENT

Communication development. Speaking (expressive language). The student shall be provided opportunities to talk about what is seen, heard, touched, tasted, or smelled as objects, people, and events are experienced.

LESSON OBJECTIVE

Identify foods in different forms using all five senses.

ASSESSMENT CRITERIA

Describe and compare foods using all five senses.

Science **Prekindergarten**

PK

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Construct a "Sammy Senses" puppet. Cut out two eyes, one nose, one mouth, one tongue, two ears, and two hands. Glue only the mouth on a paper bag.

Introduce "Sammy Senses" (with mouth only) to the students. "Sammy Senses" tells the students that he is going to teach them about the five senses, but he will need help. He asks what needs to be added to the bag to complete him.

As the students name the various features, tape them onto Sammy. As each feature is added, ask the students to identify the function of each by repeating, "Eyes are for seeing, ears are for hearing, nose is for smelling, tongue is for tasting, hands are for touching."

Serve each student a small cup of fruit salad. Ask several students to describe a piece of fruit in the fruit salad, using all five senses. Also, ask how the fruits are alike and how they are different.

Lead the children to conclude that all five senses influence food choices.

RESOURCES & MATERIALS

Teacher Resource: "Pattern for Sammy Senses Puppet"

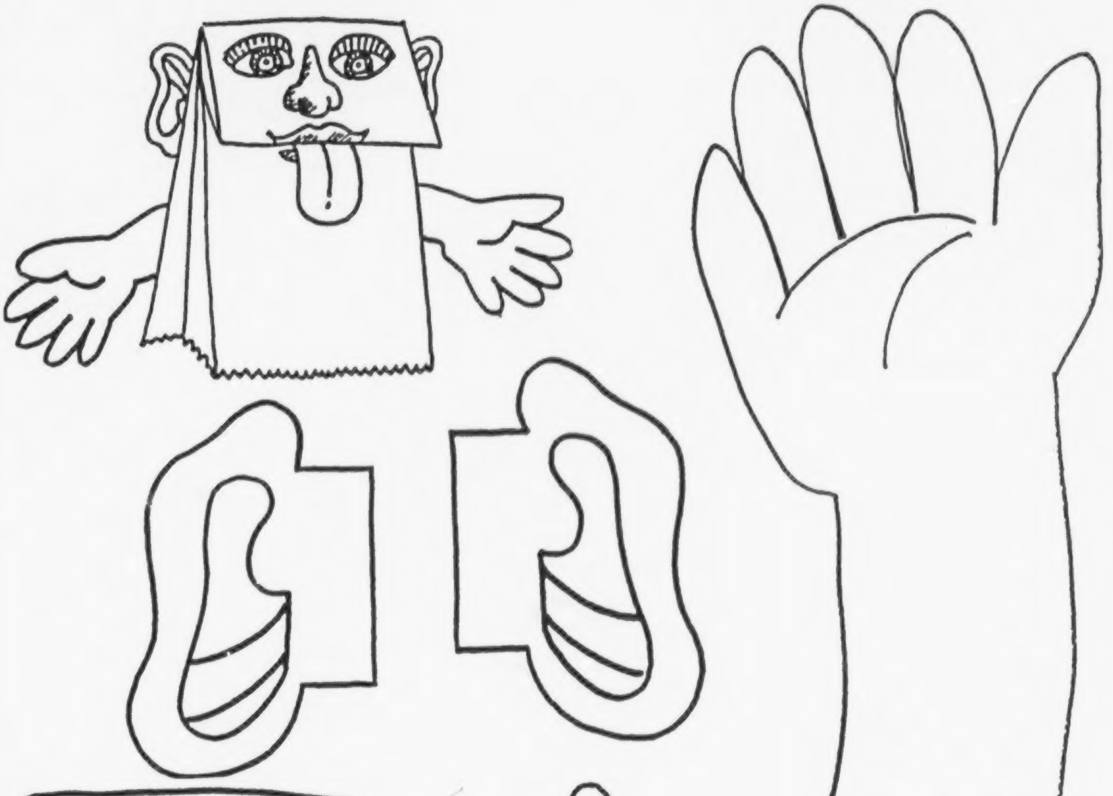
Paper bag
Glue
Tape
Scissors
Small cups
Plastic spoons
Fruit salad (canned or fresh)

In advance, ask the cafeteria manager to help provide food supplies for this activity.

ESSENTIAL ELEMENT

Cognition development. Comparing and contrasting. The student shall be provided opportunities to compare similarities and differences among objects using taste, smell, touch, sight, and sound (science).

Sammy Senses Puppet



LESSON OBJECTIVE

Identify food as a source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Compare the size of clothes and how they fit in relation to growth.
- Recognize foods that help students grow.

ACTIVITIES & STRATEGIES

Ask several students to come to the front of the classroom to put on the new clothes found in the bag. (Give them infant, toddler, adolescent, and adult clothes to try on.)

Ask the students these questions:
- Do the clothes fit?
- Are the clothes larger or smaller than the person wearing them?
- When did you fit into baby clothes?
- Do clothes fit you now?
- When will you fit into bigger clothes?
- What will you have to do to fit into bigger clothes?

Explain that students need foods for growth, energy, and health. The foods which help us grow include:
- Vegetables - carrots
- Fruits - apples, oranges
- Breads, Cereals, Rice, Pasta - rolls, macaroni, rice
- Milk, Yogurt, and Cheese - natural or processed cheese
- Meat, Poultry, Fish, Dry beans and Peas, Eggs, Nuts, and Seeds - chicken, steak, and refried beans

To assist you with this lesson, use "Appendix C: A Pattern for Daily Food Choices." Display examples of foods from each food group.

Option: Take photographs of students trying on the different clothes. Coordinate with the art teacher to use the pictures for Mother's Day or Valentines cards.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education " found in the introductory section of *ESR IV*

"Appendix C: A Pattern for Daily Food Choices"

Pictures of foods or real foods from each food group

Bag of different clothes and shoes from infant to adult size

ESSENTIAL ELEMENT

Cognition development. Comparing and contrasting. The student shall be provided opportunities to use vocabulary to compare objects (taller/shorter, heavier/lighter, etc.) (social studies, science, mathematics).

LESSON OBJECTIVE

Identify different foods.

ASSESSMENT CRITERIA

Identify various foods by comparing and contrasting the size, weight, texture, aroma, and color.

ACTIVITIES & STRATEGIES

Place one food item in each lunch bag. Explain to the students that food items are in the bags and that they may reach in and "feel," but may not peek in and "look."

Ask these questions as the bags are passed around:
- How does it feel?
- Is it smooth or bumpy?
- Is it round?
- Is it long?
- How big is the food?
- Is it heavy or light?

Remind students not to say the name of the food. Let everyone have a turn before the food is identified verbally. (If students have difficulty naming the foods, then display the whole fruits or vegetables during activity.)

Display the foods on a table and discuss the similarities and differences. Tell the students to rank the foods in order by size, length, height, or weight.

Read the instructions on the worksheet, "What's in the Bag?" to the students and allow time for completion.

Show students a whole fruit, then let them see you cut it into pieces for tasting.

For an alternate activity, tell the students to draw or model with clay one of the foods in the bag.

RESOURCES & MATERIALS

Worksheet: "What's in the Bag?"

Brown lunch bags
Paring knife
Moist towelettes
Low-fat yogurt dip (optional)
Suggested foods for the lunch bags:
Bananas
Grapes
Kiwi
Peaches
Pears
Oranges
Strawberries
Carrots
Celery
Cucumbers
Jicama
Potatoes
Zucchini

TEACHER TIP

- **Tell students to wipe hands with moist towelettes before and after touching foods.**
- **Remind students that it is important to wash foods before eating them.**
- **Do not use foods that were used for touching, tasting, or for any other purpose.**

In advance, ask the cafeteria manager to assist with cutting the foods or to prepare a low-fat yogurt to extend the activity.

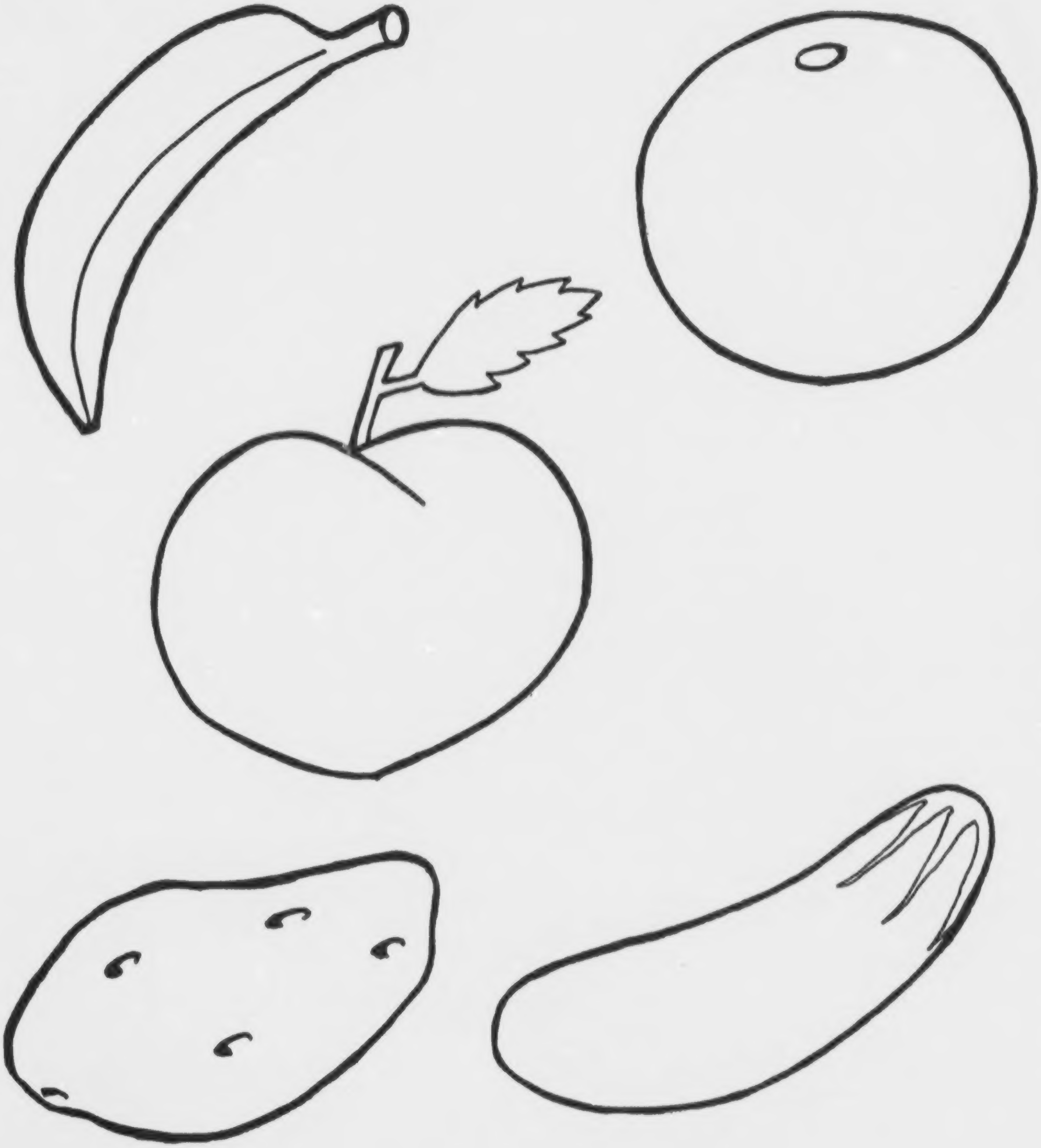
ESSENTIAL ELEMENT

Cognition development. Comparing and contrasting. The student shall be provided opportunities to compare similarities and differences among objects using taste, smell, touch, sight, and sound (science).

NAME ______________________________ **DATE** ________________

What's In the Bag?

Color the fruits and vegetables.
*Circle the fruit or the vegetable that was **not** in the bag.*



LESSON OBJECTIVE

Identify foods in different forms using all five senses.

ASSESSMENT CRITERIA

Identify foods using the sense of sight, sound, and taste.

Science **Prekindergarten**

PK

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Show the students a variety of foods that are visually appealing. Ask them to identify foods that look good to eat and to explain the reasons for their choices. Explain that the appearance of food makes it look good to eat.

Play the tape of a variety of food sounds (corn popping, bacon sizzling, biting a carrot, eating corn chips, biting an apple, biting a crispy taco, eating a cracker.) Ask the students to listen to the food sounds and then identify the food.

Ask the students to name the foods that they would like to eat because of the sounds they heard. Explain that the sound of food can help us choose that food to eat.

Wash your hands and demonstrate the steps in constructing, "Tuna Apple Cracker Crunch."

Tell the students to wash their hands and make the "Tuna Apple Cracker Crunch."

Remind the students to listen for the sounds when they eat the snack. Instruct the students to bite the "Tuna Apple Cracker Crunch," and describe the sounds and tastes of the foods.

Display a variety of foods that are visually appealing such as cherries, nectarine, fruit salad, carrot, watermelon, apple, bell pepper, green salad. Discuss the appearance of these foods and the way they might sound when they are eaten.

Distribute copies of the handout, "Tuna Apple Cracker Crunch" for the students to take home. Encourage them to make the "Tuna Apple Crunch" at home with their families.

RESOURCES & MATERIALS

Handout: "Tuna Apple Cracker Crunch"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Tape recorder
Cassette tape of a variety of food sounds made prior to class

For each student:
- A cup
- A fork
- A knife
- Water-packed tuna
- Low-fat mayonnaise
- Chopped fresh apple
- Cracker

In advance, ask the cafeteria manager to help provide food supplies for this activity.

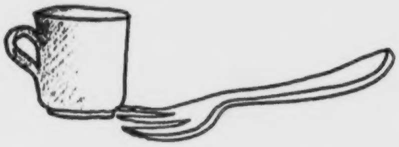
ESSENTIAL ELEMENT

Cognition development. Comparing and contrasting. The student shall be provided opportunities to compare similarities and differences among objects using taste, smell, touch, sight, and sound (science).

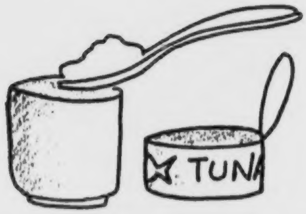
NAME ______________________________ DATE ______________

TUNA APPLE CRACKER CRUNCH

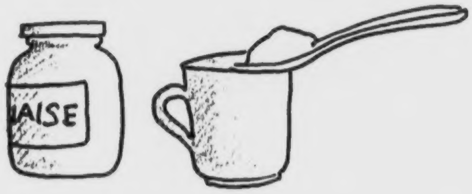
1. Get a cup and fork.



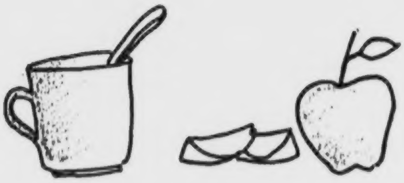
2. Put a small bit of plain tuna in the cup.



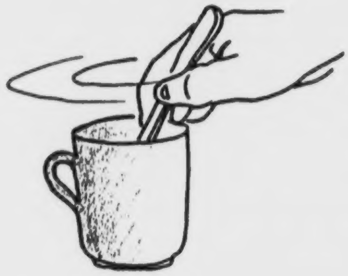
3. Add a little mayonnaise.



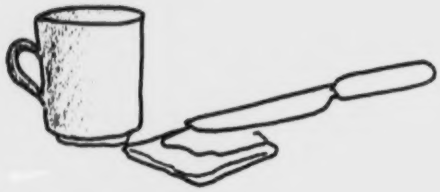
4. Add a few pieces of chopped apple to the tuna in the cup.



5. Stir with the fork.



6. Get a cracker and spread the tuna on it.



7. Eat the tuna apple cracker. **CRUNCH !**

LESSON OBJECTIVE

Examine food traditions.

ASSESSMENT CRITERIA

Describe traditional foods served for holidays and family gatherings.

ACTIVITIES & STRATEGIES

Display pictures of families enjoying holiday meals and special occasion foods. Discuss how food, the special occasion, and the people present contribute to the enjoyment of the celebration.

Ask the students to describe the foods served on their own families' special holidays.

Ask the students to describe the foods served at their birthday parties.

Plan a pretend birthday celebration for all the students in the class. Ask them to help think of some nutritious foods for the birthday celebration.

Ask the following questions:
- What is a nutritious fruit juice you enjoy drinking? (orange juice, apple juice, cranberry juice, or pineapple juice)
- What kind of nutritious nuts do you enjoy eating? (peanuts, pecans)
- What kind of nutritious vegetable slices do you enjoy eating? (carrot, celery, cauliflower, broccoli, green pepper)
- What kind of nutritious dip do you enjoy eating? (peanut butter, ranch, yogurt, bean)

Role-play a pretend birthday party. Pin a name tag with the birthdate on each student. Sit on the floor and sing *Happy Birthday to You*, blow out the candles, and play the "Eat, Glow, and Grow" game, as described below.

Eat, Glow, and Grow

Game instructions:
Instruct students to crouch toward the floor and "grow" a little each time the teacher calls out the name of a nutritious food. The students may take turns being the teacher.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education " found in the introductory section of *ESR IV*

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Magazine pictures of:
- A Christmas or Thanksgiving dinner
- A picnic
- A birthday party
- Easter dinner
- Hebrew feasts
- Cinco de Mayo

Suggested list of foods to name in the "Eat, Glow, and Grow" game:
- Tuna Salad
- Ham
- Prunes
- Raisins
- Raisin bran cereal
- Spaghetti with meat
- Green beans
- Black-eyed peas
- Green peas
- Sesame seeds
- Bran muffins
- Macaroni and cheese
- Bread
- Oranges
- Apples
- Strawberries
- Papayas
- Potatoes
- Watermelon
- Cherries
- Grapes
- Fish
- Corn
- Cantalope
- Carrots
- Spinach
- Tacos
- Eggs
- Pizza
- Milk
- Waffles
- Yogurt

ESSENTIAL ELEMENT

Cognition development. Identifying. The student shall be provided opportunities to discuss how and why people celebrate special events (birthdays, holidays, etc.) including those that are culturally related (social studies).

Social Studies Prekindergarten

PK

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Examine food traditions.
- Discuss family food preferences.

ASSESSMENT CRITERIA

Discuss different family food traditions.

ACTIVITIES & STRATEGIES

Discuss the many different combinations of family members that one can identify as *family*. Some points to address during the class discussion include:

- Some families do not include a mom and a dad.
- *Family* means different things to different people.
- Persons do not have to be related to us by blood or adoption to be called *my family*. Discuss *foster families*. It is important to assure all of the students that they have someone who cares for them.
- In some families, all members call each other by their first names.

Suggestions for questions to ask:

- How many people are in your family?
- What are the names of your family members?
- What foods does your family like to eat?
- What is your favorite food?
- What special foods does your family like to eat?
- Name the special occasions when you and your family eat special foods.

Discuss the different family food traditions.

Distribute copies of the worksheet, "My Family Tree." Tell students to draw and color a picture of their family at the bottom of the page.

Tell the students to take the worksheet home and ask a family member to help them complete the top part of the worksheet.

RESOURCES & MATERIALS

Worksheet: "My Family Tree"

ESSENTIAL ELEMENT

Communication development. Speaking (expressive language). The student shall be provided the opportunities to engage in a conversation by sharing ideas with others.

NAME ______________________________ **DATE** ________________

My Family Tree

My family has ________ *members.*

Names of my family members:

____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________

Foods my family likes to eat:

____________________ ____________________
____________________ ____________________

My favorite food is ______________________________

This is a picture of my family:

Education for Self-Responsibility IV:

NUTRITION EDUCATION

GRADE K

TEXAS EDUCATION AGENCY

ESR IV

Native Americans in Texas

Kindergarten

There are approximately two million Native Americans in the United States with 65,877 residing in the state of Texas. They are divided into four hundred native nations in the United States with two of these located in Texas. Native Americans are identified by the government as those who are descended from any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition. However, this definition varies among the native nations; some do not accept a person with only one-quarter native heritage, while other nations accept people with 1/128 native heritage.

At the time of the European's arrival in North America in the 1600s, there were an estimated ten million Native American inhabitants with over two hundred languages spoken. Their skin color ranged from very light to very dark, and height and hair textures also varied considerably. Some of the tribes used advanced farming techniques, some tribes were nomadic, and others had very advanced housing construction. Dignity and the rights of individuals were very important factors in the lives of Native Americans. Tribal councils typically made decisions for their tribes only after group deliberations, and this custom of representative government was soon incorporated into constitutional documents which served as a basis for U.S. democracy.

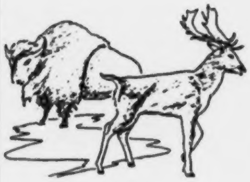
With the expansion of the Western frontier, the image of the Native American changed from neighbor to warrior, and reports of Native American attacks on settlers were widespread. The Indian Removal Act was passed in 1830 which stated that Indians could only be relocated with their consent; however, the Indians were forcibly removed to territories or reservations determined by the U.S. government. As a result of exposure to European diseases such as smallpox and measles, the Native American population was soon diminished.

THE INDIANS OF TEXAS

Between the 1500s and the 1800s, there were fourteen different tribal groups living in Texas. These ***tribes*** consisted of Native Americans who lived in the same general location, shared the same language and customs, followed the same leader(s), and had similar food preparation techniques and housing types. The fourteen tribes can be divided into four main groups or cultures:

- Plains
- Pueblo
- Southeastern
- Western Gulf Coast

Plains Indians



The Plains Indians of Texas were nomadic hunters. They hunted antelope and bears, but they relied primarily on the large herds of buffalo that roamed the Plains for their food, clothing, and shelter. Once the buffalo had been killed and skinned, the meat was prepared by drying (jerky), boiling or broiling, and some was eaten raw. The stomachs were used for water bags and the horns, hooves, and bones were used to make ornaments and utensils. The buffalo hair was used to make ropes, thread, and strings. Tanned buffalo hides were made into clothing, saddles, bedding, and tepee covers.

The Plains Indians lived in portable housing called ***tepees*** which consisted of twenty or more poles covered with tanned buffalo hides. They were sometimes twenty-five feet in diameter and fifteen to twenty feet tall and the opening to the tepee was typically three to four feet in size and faced the east. During the summer, the sides of the tepees could be rolled up to let in the breeze. During the winter, a fire was built in the middle of the tepee and the hole at the top was used as a vent. Mattresses were made from willow branches and covered with blankets made of buffalo hides. Buffalo and deer hides were scattered on the ground for added warmth and comfort.

The four different tribes of the Plains culture included:

- Apache
- Comanche
- Kiowa
- Tonkawa

The Apaches

The Apaches were skilled horsemen, warriors, and buffalo hunters and their prized possession was the bow and arrow. Legends claimed that an Apache warrior could shoot a dozen arrows before an enemy could reload a rifle. Several groups of Apaches made up the Apache nation in Texas, but the Lipan Apaches and the Mescalero Apaches were the two primary bands. ***Bands*** were members of a tribe who joined together for a common purpose similar to a troop.

- Lipan Apaches lived and roamed in the hill country and areas along the Rio Grande. They dominated much of the Plains area of Texas until they were driven to the west and south by the Comanches.

- Mescalero Apaches roamed the mountains of West Texas, New Mexico, and Mexico. They depended less on buffalo, and lived in settled mountain villages similar to the Pueblos of New Mexico.

Apache warriors cut their hair very short on the left side to show multiple earrings and let it grow very long on the right side for feathers and other decorations. The men tried to remove all facial hair including their eyelashes, and the women wore colorful clothing, bracelets, rings, and necklaces.

While buffalo was the primary source of food for the Apaches, they also relied on gardening. Although gardening was not typical of most Plains Indians, the Apaches grew beans, corn, and squash. Their gardens were often raided by the Comanches and soon became less important when the Apaches acquired horses to follow buffalo herds.

The Apaches had a strong fear of the dead and their custom called for burying deceased individuals and their belongings very quickly. The Apaches did not visit the gravesites and were not allowed to speak the dead person's name.

As with other Native American tribes, the Apache's numbers were slowly reduced by attacks from the Comanches and the Spanish explorers and many died from exposure to European diseases. After confrontations with the U.S. Cavalry in the late 1800s, the Apaches were forced to move to reservations in New Mexico by the U.S. government.

The Comanches

The Comanches moved onto the Plains of Texas in the early 1700s in search of buffalo, and their territory ranged from San Antonio to Kansas, New Mexico, and Colorado. Due to these extended boundaries, some of the Comanche territory overlapped with other tribes' territories. This lead to a constant threat of territorial battles.

Like the Apaches, the Comanches were divided into several different bands. The two bands that lived in Texas were the Honey-Eaters, who resided in northwest Texas between the Brazos and Colorado Rivers, and the Antelopes, who lived in the Panhandle area near Amarillo. Native Americans began to acquire horses from European explorers between 1650 and 1700, and the Comanches soon became excellent horse breeders, riders, and skilled buffalo hunters.

Comanches wore their long hair braided and decorated their bodies with bright paint and tattoos. When Comanche braves were on the warpath, they wore headdresses made of buffalo horns decorated with feathers.

Although the Comanches were a constant threat to Texas settlements, they surrendered to the U.S. Cavalry in 1875 and were moved to a reservation in Oklahoma.

The Kiowas

The Kiowas were originally from the northern plains and moved to the Palo Duro Canyon area of the Texas Panhandle in the 1800s in search of buffalo. They were one of the few tribes that were on friendly terms with the Comanche. The Kiowas did not grow food, but relied on their abilities as hunters to provide food. In addition to buffalo, they also hunted and ate deer, bear, elk, and antelope.

The Kiowas were well known for their annual sun dance. In mid-June every year, the Kiowas worshipped the sun to help prevent illness and disaster, to bring plenty of buffalo for food and other supplies, and to bring victory in battle.

The Kiowas often painted pictures on tanned buffalo hides or on the sides of their tepees which depicted important events that happened to an individual or to the whole tribe.

The Tonkawas

The Tonkawas lived in villages of grass-covered huts to the south of the largest buffalo herds. Although they depended on the buffalo for food, clothing, and shelter as the other Plains Indians did, the Tonkawas turned to other food sources such as fish, birds, rabbits, deer, rattlesnakes, nuts, berries, and fruits.

The Tonkawa were a rather timid group and avoided warfare. Repeated attacks by the Comanches reduced the number of Tonkawas. By the time Texas joined the Union, very few Tonkawas remained.

Pueblo Indians

The Pueblo Indians lived in the desert area of West Texas that is now El Paso and the land along the Rio Grande to the Big Bend area. Less is known about this culture than any other Native American culture in Texas. The Pueblos were a peaceful group, but they did fight occasionally with the Apaches when the Apaches entered their territory. They lived in large, flat-roofed buildings made of ***adobe brick*** which was made by drying clay mud in the sun. The adobe brick kept the homes cool in the summer and warm in the winter.

The Pueblos were primarily farmers who grew beans, corn, squash, and other vegetables and used the Rio Grande for irrigation of their crops. When the Rio Grande was dry, they often hunted small game and ate plants such as mesquite beans and prickly pears.

Little evidence remains of the Pueblo Indians of Texas. It is believed that many of them may have become slaves of the Spanish and were taken to Mexico to work in the silver mines. Others believe that they died of diseases brought by the Europeans while some think that the Pueblos became allies of the Apaches and joined their tribe. The primary evidence of their presence in Texas is the pictographs or paintings drawn on the bluffs of the Concho, Pecos, and Rio Grande Rivers. The three different tribes that can trace their culture back to the Pueblo way of life include:

- Jumano
- Concho
- Tigua

The Jumanos

The Jumano tribe relied primarily on farming as their food source. The frequent droughts experienced in the far West Texas area during the 1600s greatly influenced the dwindling number of Jumanos. By the time the Spanish explorers arrived, most of the Jumano settlements had already been abandoned, and by the 1800s, few settlements remained at all. It is believed that a few remaining Jumanos joined the Lipan Apaches.

The Conchos

The Conchos were closely linked to the Jumano tribe. They settled further south on the Rio Grande than the Jumano tribes and probably depended more on hunting than farming to survive. Almost all traces of the Concho tribe had disappeared by the 1600s, although many historians believe that the Conchos eventually became part of the Jumano tribe.

The Tiguas

The Tiguas were originally from New Mexico. A segment of the Tiguas fled from New Mexico with the Spanish during the Pueblo Revolt in 1680 and settled near present day El Paso. They were much like the Jumano tribe and relied heavily on farming. Many Tigua descendents still live on the Tigua reservation near El Paso and it is one of the two reservations remaining in Texas.

Southeastern Indians

The Southeastern Indians were probably the richest and most advanced of the Native American tribes in Texas. Most of these Native Americans were farmers and lived in settled villages located in East Texas. The Southeastern cultures included tribes of present day Texas as well as Alabama, Louisiana, and Mississippi. The five Southeastern cultures included:

- Alabama-Coushatta
- Atakapan
- Caddoe
- Cherokee
- Wichita

The Alabama-Coushattas

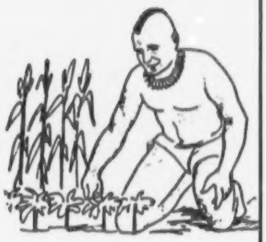
The Alabama-Coushattas moved from Mississippi to East Texas in the early 1800s and lived as farmers along the Trinity River. In 1854, the Alabama-Coushattas were given their own reservation by the state of Texas near present day Livingston in East Texas. In 1928, they were given more land and currently they maintain one of two reservations in Texas. Many of the Alabama-Coushatta tribe fought in the Texas Revolution along with other Texans.

The Atakapans

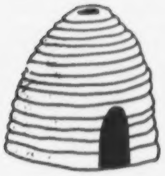
The Atakapans lived between the Sabine Lake and Galveston Bay in the southeastern part of Texas and were more nomadic than the other cultures of the Southeast. The Atakapans who lived inland were able to grow some crops, but those who lived on the swampy coastal areas had to rely on their hunting abilities for food such as fish, wild game, nuts, berries, and alligators. By the early 1800s, most of the

Atakapans had either died or joined other Native American tribes in the Western Gulf Coast region.

The Caddoes



The Caddoe tribe was the most advanced group of Native Americans in Texas. It was a farming tribe with very sophisticated farming techniques such as ***crop rotation*** which involved moving crops from one field to another without planting the same crop in the same field for two consecutive years. This process helps prevent the soil from being overworked. Their primary source of food was corn, but they also grew beans, figs, peaches, pumpkins, squash, sunflower seeds, tobacco, and watermelon. The Caddoes also hunted deer, buffalo, bears, snakes, ducks, rabbits, and wild turkey and gathered nuts and berries. They were excellent fishermen and are credited for developing the ***trotline*** which is a fishing line with several baited hooks stretched across a river or creek allowing several fish to be caught at one time. They made beautiful and colorful pottery, rugs, and baskets and traded with the Spanish and other Native American tribes for goods they could not produce themselves.



The Caddoes had a very well-organized government and all members of the tribe contributed when a new house needed to be built or any other task needed to be completed. The Caddoes lived in villages scattered along the rivers and creeks of East Texas. The houses were large, dome-like structures called ***roundhouses*** which were made of stakes covered with mud, grass, and tree limbs. The inside of the home was decorated with colorful handcrafted rugs and baskets, reed beds, and tanned buffalo hides. A fire burned at all times in the home of the Caddoes because it was believed that the fire would scare away evil spirits.

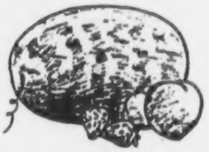
Like other tribes, the Caddoes had several different bands which called each other "Taychas" meaning friend. The Spanish later referred to the Caddoes as Taychas pronouncing it as "Tejas," and the word was later adapted to its English version, "Texas".

The Caddoes' custom of greeting visitors with weeping, wailing noises, and tears often frightened the Spanish and French travelers, but was their way of saying "hello."

The Cherokees

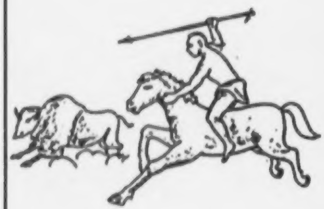
The Cherokees settled in the areas east and south of present day Dallas after being forced from their territories in Georgia and Tennessee. They lived in grass houses similar to those of the Caddoes and were also farmers, hunters, and fishermen. A famous Texan, Sam Houston, lived among the Cherokees at one time and attempted several negotiations with the Texas government to allow them to remain on their land. His repeated attempts failed, and the Cherokees were moved to reservations in Oklahoma by 1839.

The Wichitas



Wichita was a common name given to the four tribal groups called Taovayas, Tawakonis, Wacos, and the Wichitas. These groups were originally from Kansas and Nebraska, and began moving to Texas in the late 1600s where they lived in the territory west of the Caddoes along the Red River. The Wichitas used more tattoos than other tribes to create colorful and interesting designs. Men decorated their eyelids, the backs of their hands, and placed symbols of victory in war on their arms and chests. The women also covered themselves with tattoos.

The Wichitas took on the characteristics of both the Plains and the Southeastern tribes by living in villages along the river, hunting buffalo, deer, and antelope, and cultivating fields of corn, beans, pumpkins, melons, and squash. The Wichitas were well-known for their handicrafts of clay pots, leather bags, corn grinders, and wooden containers. They traded with the French, as the Caddoes did, but often fought with the Spanish.



The Wichitas, like other Texas Native Americans, were threatened by the Comanches who eventually took over much of the Wichitas' land. The number of Wichitas dwindled considerably by the mid-1800s due to Indian warfare, military warfare, or movement to reservations in Oklahoma.

Western Gulf Coast Indians

The Western Gulf Coast Indian cultures lived along the Gulf of Mexico where they had early contact with European explorers. These Native Americans were talented craftsmen who made canoes out of tree trunks which enabled them to fish for food in the Gulf waters. Their diet consisted of fish, clams, oysters, porpoises, scallops, turtles, and underwater plants as well as rabbits, deer, and stray buffalo. European explorers reported that the tribal members were beautiful, tall and muscular, wore few clothes, and covered themselves with brightly colored tattoos.

Although the Western Gulf Indians were nomadic, their homes were a combination tepee and wooden hut. Willow poles were tied together similar to the poles of the Plains Indians' teepees and were then covered with animal skins and woven grass.

Early contact with European diseases reduced the number of Western Gulf Coast tribes, and warfare and hurricanes wiped out most of those who remained. The two tribes of the Western Gulf Coast included:
- Coahuiltecan
- Karankawa

The Coahuiltecans

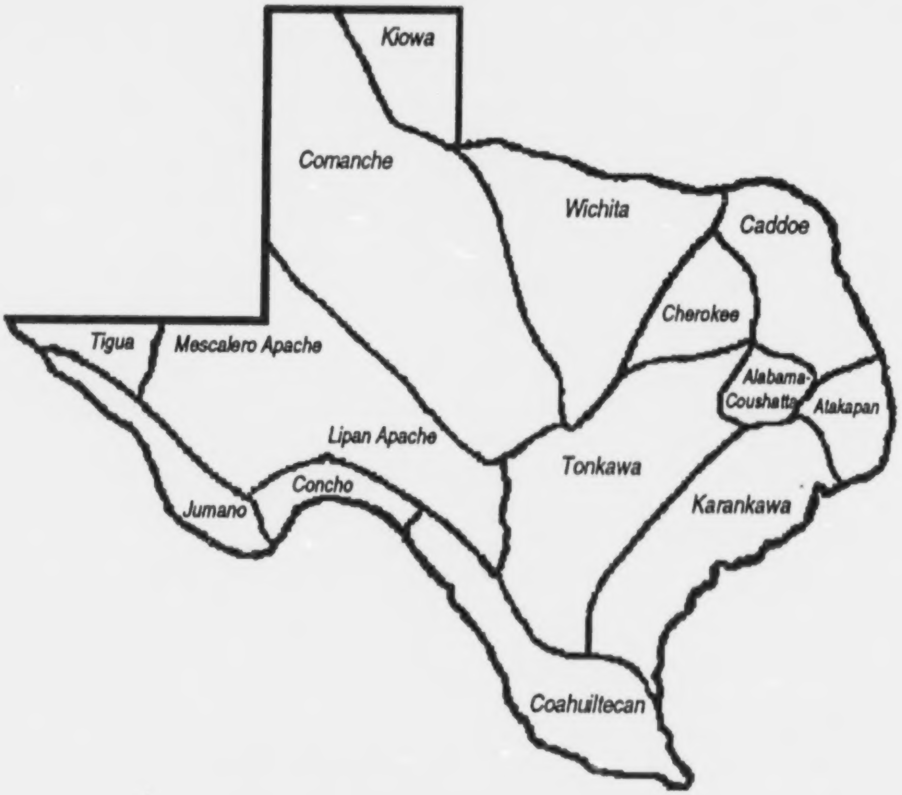
The Coahuiltecan tribe lived in the dry brush country of the south Texas Plains and spent most of their time in search of food. Large animals were difficult to find, but they occasionally found deer, stray buffalo, wild hogs, and rabbits. Common foods included cactus, ant eggs, roots, snakes, lizards, worms, and nuts.

The Karankawas

The Karankawa tribe lived near present day Corpus Christi and Galveston. They were the first to greet the Spanish explorers as they landed on the shores of Galveston Island. The Karankawas' initial meetings with the Spanish were friendly, but the friendship eventually turned to enslavement of the Spanish.

CONCLUSION

Presently, there are no original Texas Native American cultures left. Exposure to disease, destruction of the buffalo, warfare, and advanced technology caused the decreasing numbers of the Texas tribes. Those that remained were eventually moved to reservations in New Mexico and Oklahoma with the exception of two small reservations of tribes that migrated to Texas from other parts of the country. The Alabama-Coushattas live on a reservation in East Texas near Livingston, and the Tiguas live near El Paso in West Texas.


Kiowa
Comanche
Wichita
Caddoe
Cherokee
Tigua
Mescalero Apache
Alabama-Coushatta
Atakapan
Lipan Apache
Tonkawa
Concho
Jumano
Karankawa
Coahuiltecan

Fine Arts **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify different foods.

ASSESSMENT CRITERIA

Identify fruits and vegetables by shape and color.

ACTIVITIES & STRATEGIES

Distribute copies of the worksheet, "Colorful Fruits and Vegetables." Help the students identify the different fruits and vegetables, then tell them to color the pictures.

Make a recipe of "Great Modeling Clay:"
1 cup flour
1/2 cup salt
1/3 cup water
Food coloring
Mix all ingredients together in a bowl and knead until smooth.

Tell the students to make a 3-dimensional or a flat fruit or vegetable with the modeling clay. For flat forms, roll out the clay between two layers of waxed paper, then let students cut the shapes with cookie cutters or cardboard stencils.

Dry the shapes for two to four days, turning the shapes over each day.

Students may add more color to the fruits and vegetables with felt tipped markers or tempera paint. Keep the brush wet when using paint.

A coat of shellac may be applied to make the products shiny. Leftover clay stays moist for months if it is wrapped in foil, a plastic bag, or an airtight container.

RESOURCES & MATERIALS

Worksheet: "Colorful Fruits and Vegetables"

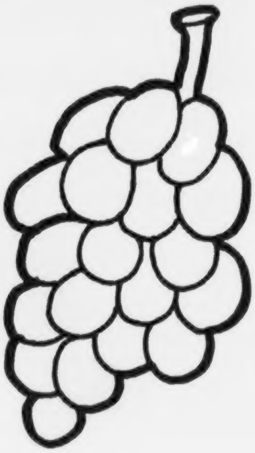
Salt
Flour
Water
Food coloring
Bowl
Spoon
Cookie cutters or cardboard stencils
Felt tipped markers or tempera paint
Foil, plastic bag, or airtight container

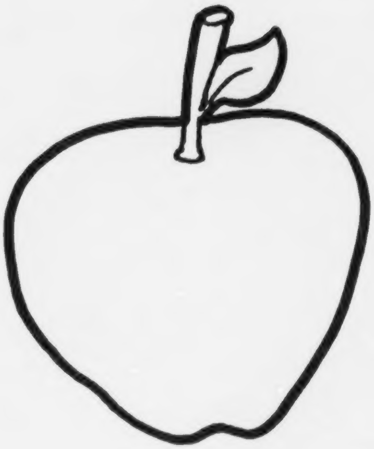
ESSENTIAL ELEMENT

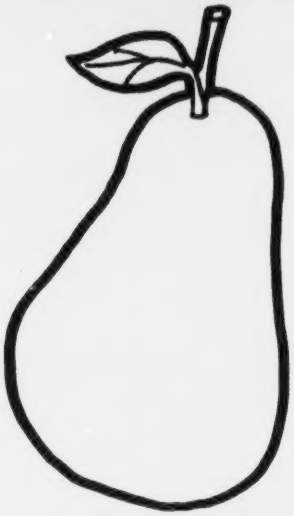
Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media, including drawing, painting, and printmaking.

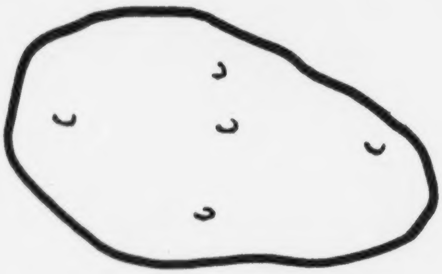
NAME ______________________________ **DATE** ____________________

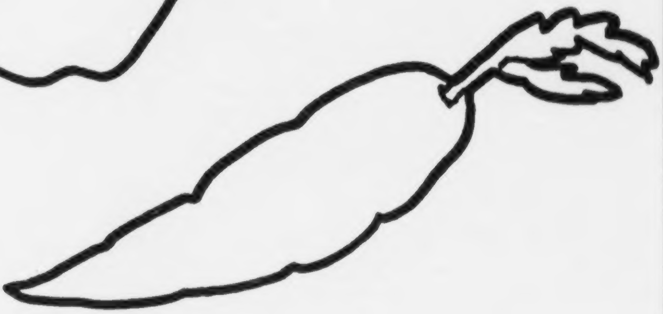
Colorful Fruits and Vegetables

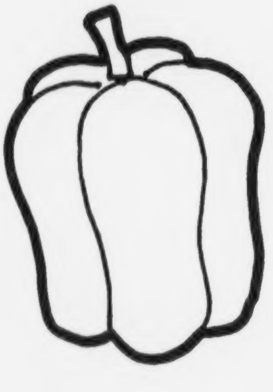


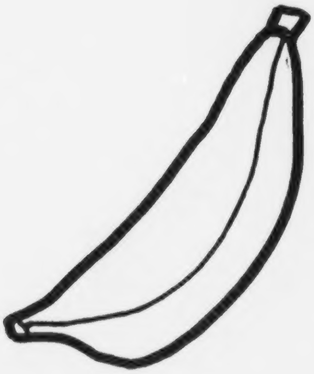


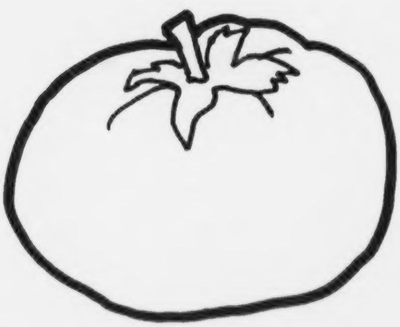












LESSON OBJECTIVE

Name the sources of food.

ASSESSMENT CRITERIA

Identify peanuts as a food source from plants.

ACTIVITIES & STRATEGIES

Discuss the source of peanuts by displaying an actual peanut plant or showing a picture of a peanut plant. Establish that the peanut is the seed from a peanut plant. It is not grown on a tree, but grows underground like a potato, carrot, or beet.

Distribute whole roasted peanuts to the class for the students to shell and eat.
- Which part of the peanut is the shell?
- Which part of the peanut is the hull?

Let the class participate in making peanut butter from the "Peanut Butter" recipe.

Have a peanut butter tasting party.

Play the "Peanut Butter Sandwich," a song by Raffi.

Distribute copies of the "Peanut Butter Sandwich" recipe for the students to take home.

RESOURCES & MATERIALS

Handout: "Peanut Butter" recipe

Raffi Album: *Singable Songs for the Very Young,* 1976, Troubadour Records, Ltd. MCA Records Stock # MCA-10037 $10.95

Peanut plant or picture of peanut plant
Whole roasted peanuts
Ingredients and equipment for peanut butter:
  Roasted, salted peanuts
  Canola oil
  Salt
  Blender
Bread, crackers, or apple slices for tasting
Jams or jellies

TEACHER TIP

The Texas Agricultural County Extension Agent may be able to provide a peanut plant.

In advance, check with the cafeteria manager about using commodity peanuts.

ESSENTIAL ELEMENT

Fine arts. Music. Singing concepts and skills. The student shall be provided opportunities to sing songs including total group singing of action, seasonal, patriotic, and popular songs.

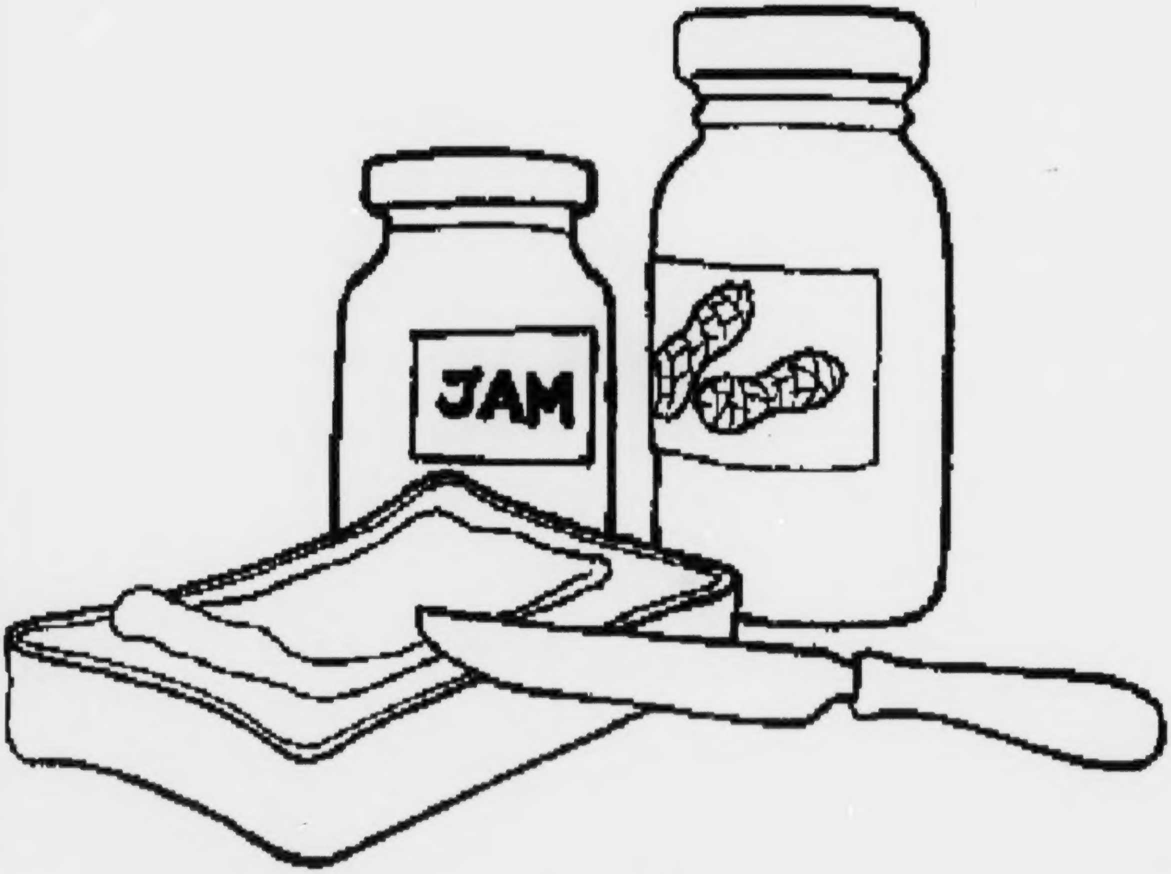
NAME ______________________________ **DATE** ________________

Peanut Butter

Serves 10

1 cup roasted unsalted peanuts
2 tablespoons oil (canola or vegetable)
1⁄4 teaspoon salt

Put peanuts, oil, and salt in blender and grind to the desired consistency. Eat on crackers or apple slices.



LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Identify the importance of making nutritious food choices at snack time.

Fine Arts **Grade K**

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Read aloud to the class the book, *Too Much Junk Food,* by Stan and Jan Berenstein.

Tell students to draw a happy face on a brown lunch bag (open end up). This will represent the *beary good stomach.* Instruct them to choose a healthy snack and put it into the bag. Allow each student to talk about the snack that is in their *stomach.*

Suggested snacks: assorted fresh fruits and vegetables, low-fat cheese and crackers, popcorn, raisins, and nuts.

Tell students to wash their hands and eat the healthy snack they have chosen.

RESOURCES & MATERIALS

Too Much Junk Food by Stan and Jan Berenstein

Brown lunch bags
Markers or crayons
A variety of healthy snack foods

In advance, ask the cafeteria manager to provide a variety of healthy snacks that are individually wrapped.

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, and printmaking.

LESSON OBJECTIVES

- Make wise food choices as part of self-responsibility for health and wellness.
- Explain the importance of breakfast.

ASSESSMENT CRITERIA

Identify nutritious foods from the school breakfast and lunch menus.

Health **Grade K**

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Read the school breakfast and lunch menus for the week to the class. Discuss healthy food choices, using "Appendix C: A Pattern For Daily Food Choices." Explain the importance of eating a healthy breakfast each day.

Pair up the students; one student lies down on butcher paper and their partner outlines their body.

Arrange a food service line with pictures of food placed in an order similar to a cafeteria serving line. Give the students paper plates and ask them to go through the pretend food service line as a pair to choose pictures of a nutritious breakfast or lunch for their outlines. Advise the students to select fruits, vegetables, breads, milk, and meats.

Instruct the students to glue the foods to the boy and girl outlines. Discuss wise food choices for health and wellness.

Demonstrate one or more of the "Fruity Snack Ideas" to the class.

Tell the students to wash their hands and allow them to make one of their own fruity snacks.

Distribute copies of the handout, "Fruity Snack Ideas" for the students to take home.

RESOURCES & MATERIALS

Handout: "Fruity Snack Ideas"

"The Heart Treasure Chest," American Heart Associations Schoolsite Program, Young Children

"Appendix C: A Pattern For Daily Food Choices"

Pictures of foods from magazines or a set of cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, IL 60018-4233
(702) 696-1860, Ext. 220

Butcher paper
Ingredients for the selected fruity snack
Paper plates

In advance, ask the cafeteria manager to provide school breakfast and lunch menus for the week.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify practices that promote nutritional health.

FRUITY SNACK IDEAS

Raggedy Ann and Andy Treat

Peach halves
Banana slice
Shredded cheese
Raisins
Maraschino cherries
Lettuce leaves
Celery sticks

- *For each treat, place a peach half, cut side down, on a plate.*
- *Place a banana slice next to the peach half for the head.*
- *Use small celery sticks for the arms and legs, with raisins at the ends for hands and feet.*
- *To make the face, use raisins for the eyes and nose and a piece of cherry for the mouth.*
- *For Raggedy Ann, add a ruffly leaf of lettuce for the skirt and some shredded cheese for the hair.*

Banana Wheels

Banana slices
Orange juice
Toasted wheat germ

- *Dip banana slices in orange juice*
- *Roll in toasted wheat germ.*

Peanut Butter Balls

1/2 cup peanut butter
1 or 2 tablespoons honey
4 tablespoons dry milk
2 tablespoons chopped nuts
2 tablespoons raisins

- *Combine ingredients.*
- *Roll into balls.*
- *Store in the refrigerator.*
- *Serve and enjoy !*

Other Fruity Ideas

Orange circles or orange smiles

Apple slices spread with peanut butter

Dried apricots, apples, or peaches

Fresh fruit and cheese

Health **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Recognize the need for frequent baths and handwashing to prevent the spread of germs.

ACTIVITIES & STRATEGIES

Explain that germs invade our bodies through openings like eyes, mouth, and cuts. When we touch food with dirty hands and then put the food into our mouths, germs get into our bodies.

Discuss ways to keep germs out of our bodies by practicing the safe handling of food.

- Do not put food directly on the table or counter; use a clean plate or a napkin.
- Keep food tightly covered in the refrigerator or in cupboards.
- The first step before preparing or eating food is to wash your hands.

Pass out small bars of soap, and tell the students that they are going to take a *pretend* shower to get rid of germs.

While taking the pretend shower, scrub from head to toe, wriggling all over. Repeat several times, "Scrub-a-dubba in the shower tubba," as the students pretend to soap, scrub, and rinse hair, face, ears, neck, body, arms, hands, legs, feet, and toes.

Suggest the frequency and reasons for baths and handwashings.

Conclude that when we keep our hands and bodies clean, the germs have a harder time getting inside our bodies through the eyes, mouth, and cuts.

Instruct students to go to the restroom in pairs to wash their hands.

RESOURCES & MATERIALS

"Well, Well, Well with Slim Goodbody Program 4: Clean Power" VHS 12 minutes NET Library

Small bars of soap possibly donated by a local hotel

In advance, ask the cafeteria manager to demonstrate the proper techniques and guidelines for handwashing.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster personal health and safety. The student shall be provided opportunities to identify daily practices that promote cleanliness.

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

Identify foods that help the body stay healthy.

ACTIVITIES & STRATEGIES

Ask the students to look at the worksheet, "Healthy and Unhealthy Foods."

Explain to the students that one of the foods in each row does not help them stay healthy, but that the other three foods do.

Explain to the students that fresh fruits and vegetables, milk and milk products, lean meats, and whole wheat bread products help them grow and stay healthy. Candy bars, cookies, soft drinks, and chips do not provide nutrients to help them grow and stay healthy. Ask the students to name healthy foods they like to eat.

Read the instructions to the students. Allow them to complete the worksheet, "Healthy and Unhealthy Foods," then review the answers.

RESOURCES & MATERIALS

Worksheet: "Healthy and Unhealthy Foods"

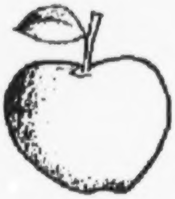
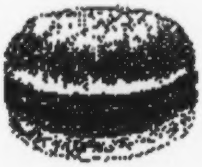
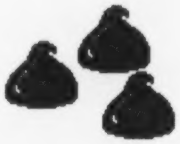
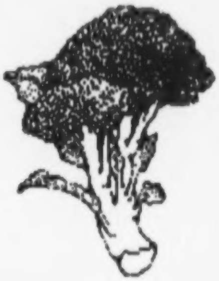
ESSENTIAL ELEMENT

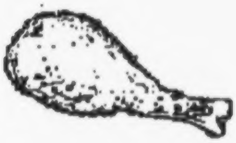
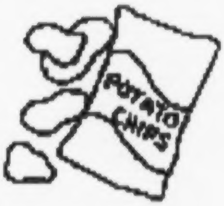
Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

NAME ______________________________ DATE ________________

Healthy and Unhealthy Foods

Circle the pictures of the foods that are **NOT** healthy for you.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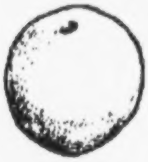
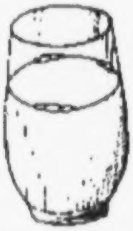
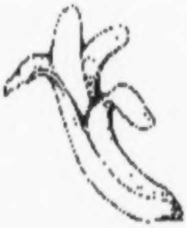
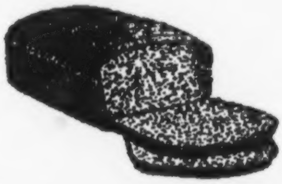
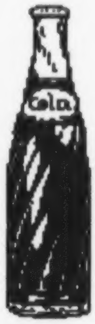
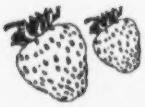
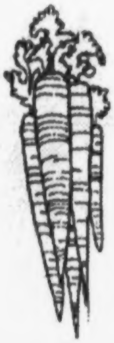
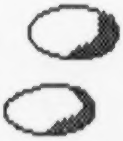
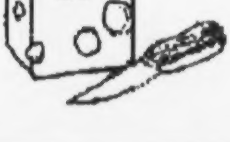
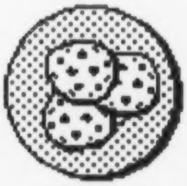





LESSON OBJECTIVE

Make wise food choices at snack time.

Health **Grade K**

K

TEXAS EDUCATION AGENCY

ASSESSMENT CRITERIA

Recognize the importance of eating nutritious snacks.

ACTIVITIES & STRATEGIES

Ask students to name some of their favorite snack foods. Explain the need for nutritious snacks.

Children's stomachs are small, so it is difficult for them to eat sufficient quantities at mealtimes to satisfy their appetites and meet their nutritional requirements.

Snacks provide a significant portion of a child's nutritional intake. Nutrition is the key factor in selecting snacks, but they should also look and taste good and be fun to eat. Limit foods high in sugar and fat such as candy, soft drinks, frosted baked goods, and chips because these foods provide little or no nutritional value.

Make peanut butter and jelly or fruit spread spirals.

1. Tell all the students to wash their hands.
2. Give each student one slice of bread.
3. Tell students to spread peanut butter and then jelly or fruit spread on the bread.
4. Start at one end of the slice of bread, and roll it up.
5. Slice the rolled-up bread into 5 spirals.

Put an assortment of nutritious snack foods on a serving tray. Let students select some to go with their spirals.

As students are eating their snacks, discuss other nutritious snack food ideas.

RESOURCES & MATERIALS

Knives and spoons
Napkins
Small plates
Serving tray
Peanut butter
Jelly or fruit spread
Bread with crusts removed
Assorted nutritious snacks:
  Bite-size pieces of cheese and crackers
  Trail mix
  Bite-size pieces of vegetables and fruits
  Air-popped popcorn
  Low-fat milk

TEACHER TIP

Nutritious snack ideas:

- **Bite-size fresh fruits and vegetables**
- **Low-fat yogurt**
- **Bagels, muffins, and English muffins**
- **Low-fat cheeses**
- **Pretzels**
- **Raisins and other dried fruits**
- **Fruit breads**
- **Low-sugar cereals**
- **Frozen fruit and fruit juices**
- **Finger sandwiches**
- **Trail mix**
- **Low-fat milk**
- **Grapes**
- **Air-popped popcorn**

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

LESSON OBJECTIVE

Discuss nutritional needs of four, five and six year olds.

ASSESSMENT CRITERIA

Choose foods for growth, energy, and good health.

Health **Grade K**

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain "A Pattern for Daily Food Choices" and the suggested daily servings for four, five and six year olds.

Introduce Mario.
- He is a boy the age of the students.
- He needs to choose foods that will help him grow, stay healthy, and give him energy.

The students will put foods that are the healthier choices on the inside of Mario.

Ask the students to choose a partner. Pass out pictures of food, keeping the following foods within the partnership:
- apple/apple pie
- bread/sweet roll
- muffin/doughnut
- milk/soft drink
- peanut butter/peanut butter cookies
- milk/fruit punch
- strawberries/strawberry candy
- baked potato/potato chips
- orange/orange roll-ups
- cheese/cheese puffs
- corn/corn chips
- baked potatoes/french fries
- grapes/grape popsicle

Call the partners holding the apple and the apple pie. Explain that the apple is a fruit and that apple pie has sugar and fat added. The body gets fewer nutrients (good things) from the apple pie.

Ask the partners to choose the food that goes on the inside of Mario. Guide the students to place the apple on the inside of Mario and the apple pie on the outside. Continue until all partners have had a turn. Discuss the placement of the food pictures on the poster of Mario.

RESOURCES & MATERIALS

Poster: "Appendix C: A Pattern for Daily Food Choices"

Teacher Resource: A poster-sized picture of Mario

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

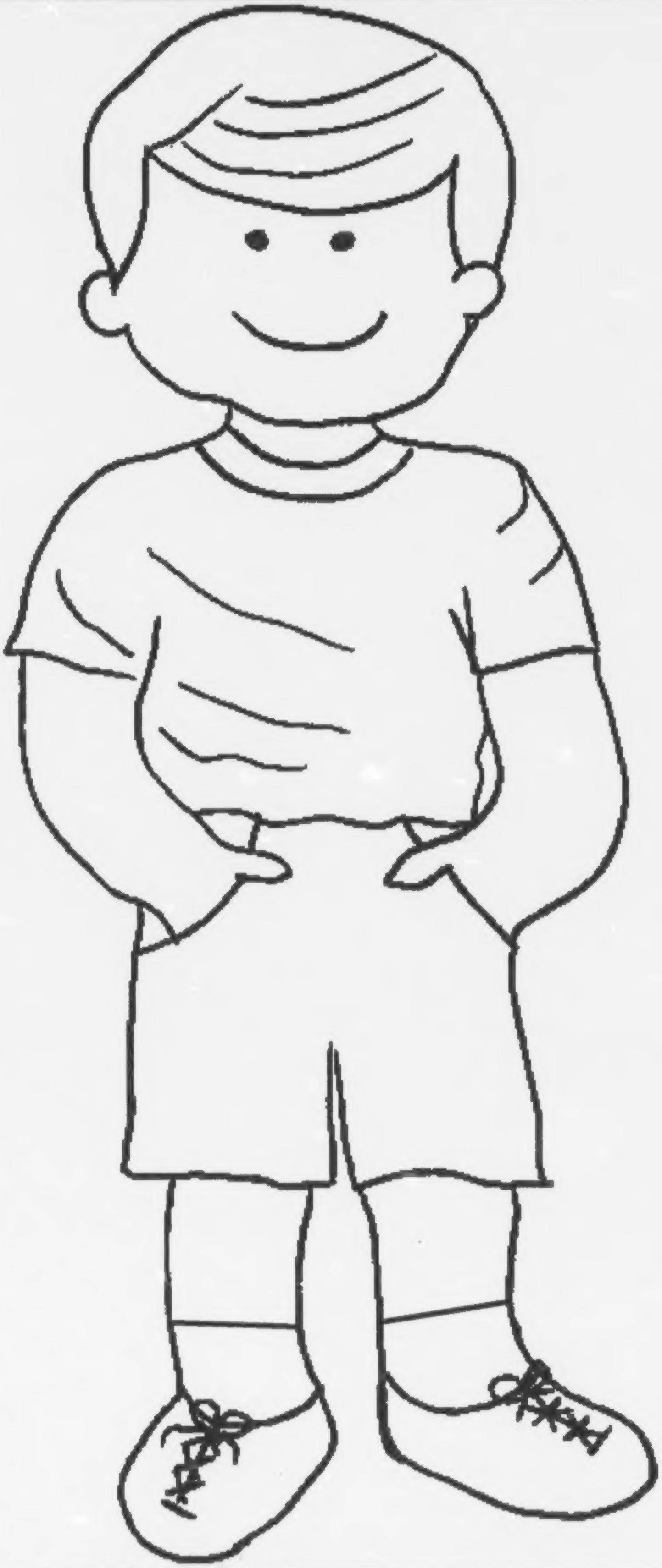
Pictures of foods from magazines with rolled masking tape on the back or a set of cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, Illinois 60018-4233
(708) 696-1860, Ext. 220

TEACHER TIP

Discuss why certain foods are healthier choices. Do not label foods as "good" or "bad."

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.



Mario

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

Identify that food helps children grow.

Health **Grade K**

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Cut out large pictures from magazines of both food and nonfood items. Glue them to construction paper so that they can be seen easily by the students from a distance.

Display the pictures one at a time, asking the students to identify each picture. Ask the students to name the pictures of items that help them grow.

Discuss how the pictures that help them grow are alike and how they are different.

Distribute the worksheet, "Choose the Foods That Help You Grow!" and read the instructions. Allow time for the students to complete the worksheet, then review the answers.

RESOURCES & MATERIALS

Worksheet: "Choose the Foods That Help You Grow!"

Magazines
Construction paper
Scissors and glue

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

NAME ______________________________ **DATE** ________________

Choose the Foods That Help You Grow!

Directions: In each of the following groups, circle the picture that would be good to eat.

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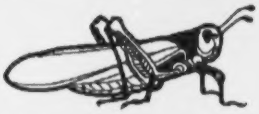
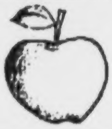
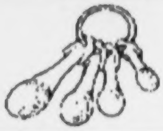

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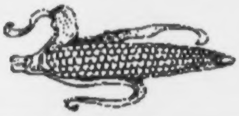
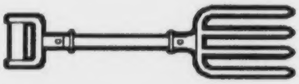
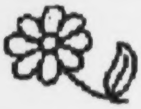

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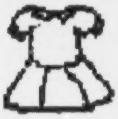
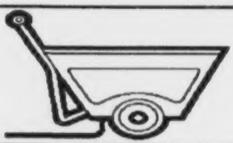
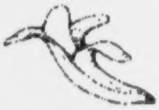

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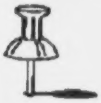
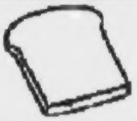
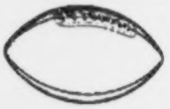

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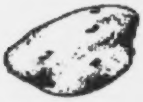
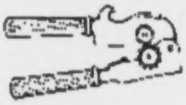
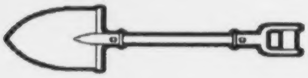

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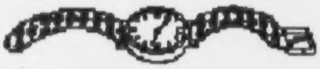
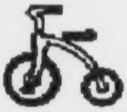
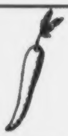

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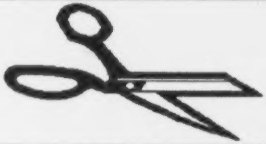
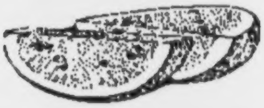
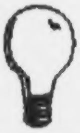

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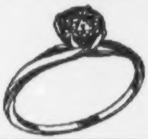
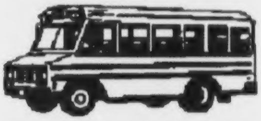
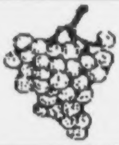

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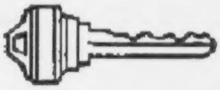
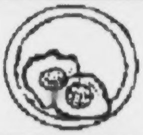
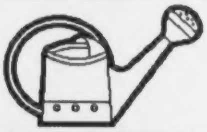

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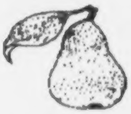
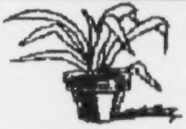
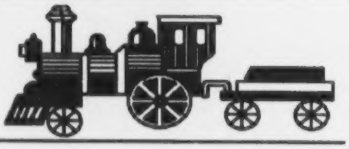

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TEXAS EDUCATION AGENCY

ESR IV

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Demonstrate physical fitness activities.

ACTIVITIES & STRATEGIES

Discuss the importance of physical fitness and relate fitness to the space explorers who need strength, stamina, and endurance.

Direct the students to pretend that they are astronauts who are training for a trip into space to land on the moon.

Lead the following training session for the astronauts:

1. Space explorers suit up: Put on pretend space suits, helmets, and moon boots. Exercise the head, shoulders, arms and legs.
2. Space explorers travel to the moon: Run in place.
3. Space explorers land on the moon: Sit on the floor and touch the toes.
4. Space explorers walk on the moon: Walk forward and backward with exaggerated high, slow steps.
5. Space explorers eat freeze-dried nutritious snacks: Eat a freeze-dried apple or banana chip snack.
6. Space explorers rest: Lie on the floor on a pretend pillow and rest.

Conclude by emphasizing the need to exercise for physical fitness in order to have the energy for work and play.

Extension:
Show a variety of foods that are available in freeze-dried form. Check with an outdoor, camping, or backpacking store.

RESOURCES & MATERIALS

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Freeze-dried apple or banana chip snack for each student

ESSENTIAL ELEMENT

Health. Personal health and safety. The student shall be provided opportunities to identify daily practices that promote habits of rest, sleep, posture, and exercise.

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Identify exercise as an activity to strengthen the heart muscle.

ACTIVITIES & STRATEGIES

Explain that exercise helps to strengthen muscles and makes the body stronger. The heart is the strongest muscle in the body, and exercise helps keep it healthy.

Display the poster, "Thumping Hearts."

Tell the students to place the first two fingers of one hand on the thumb side of the opposite wrist and press lightly. Ask them if they can feel the pulse. Count several beats out loud with them. Tell students that the pulse beats just like the heart.

Instruct the students to act out different animals. For example, hop like a rabbit; waddle like a duck; run like a dog; fly like a bird; hop like a frog; and swim like a fish.

Following the exercise, instruct the students to feel their own pulses beat again. Ask the following questions:
- Are your hearts beating faster? (Yes)
- Why are your hearts beating faster? (Exercise)
- How does exercise help your heart? (Exercise helps to strengthen the heart muscle.)
- Why do you need to exercise? (Exercise and nutritious food provide strength and energy for work and play.)
- What foods can help your heart be strong? (Milk, fruit, vegetables, bread, and meat)

Emphasize that their bodies are very important and they need to take care of them. Healthy habits will give their bodies strength, energy, and flexibility for work and play.

RESOURCES & MATERIALS

A poster-sized picture of "Thumping Hearts"

"Instructor's Resource Guide for Teaching Nutrition Education " found in the introductory section of *ESR IV*

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

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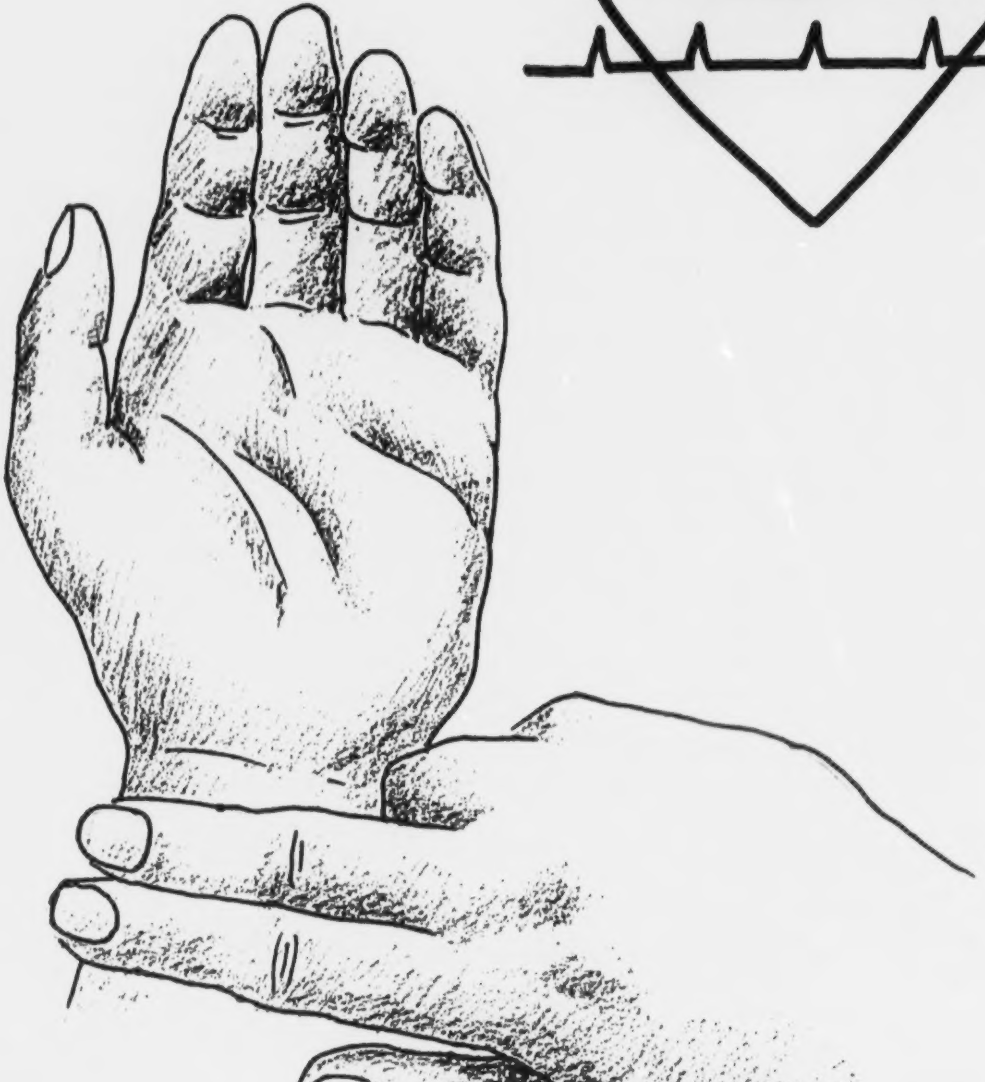
ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote habits of rest, sleep, posture, and exercise.

Thumping Hearts



Health **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

- Discuss the importance of taking care of your heart.
- Select foods that are healthy for the heart.

ACTIVITIES & STRATEGIES

Ask the students: What is a muscle?
A muscle makes our bodies work and move.
For example:

- We use muscles to give someone a hug.
- We use muscles to push a friend in a swing.
- We use our leg muscles to run, walk, and jump.

Tell them that the heart is a muscle, and its job is to pump blood around inside the body. It is the most important muscle in the body.

Talk about the foods that the students can choose to keep their hearts working properly.

- Choose a banana instead of a cupcake.
- Choose orange or juice instead of a soft drink.
- Choose raisins instead of candies.
- Choose oatmeal instead of a doughnut.
- Choose popcorn instead of potato chips.
- Choose grapes instead of a lollipop.
- Choose pretzels instead of corn chips.

Distribute the worksheet, "Smile and Frown Faces," and read the instructions to the students.

After the students have cut out the faces, show a picture of one of the foods listed above. Tell students to hold up the smiling face if they think the food is healthy or the frowning face if they think the food is unhealthy.

Discuss that some foods are not the best choices for a healthy heart and that unhealthy foods should be limited or reduced in our daily diets.

RESOURCES & MATERIALS

Worksheet: "Smile and Frown Faces"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Crayons
Scissors
Magazine pictures of the following foods:

banana	cupcake
orange juice	soft drink
raisins	candies
oatmeal	doughnut
popcorn	potato chips
grapes	lollipop
pretzels	corn chips

ESSENTIAL ELEMENT

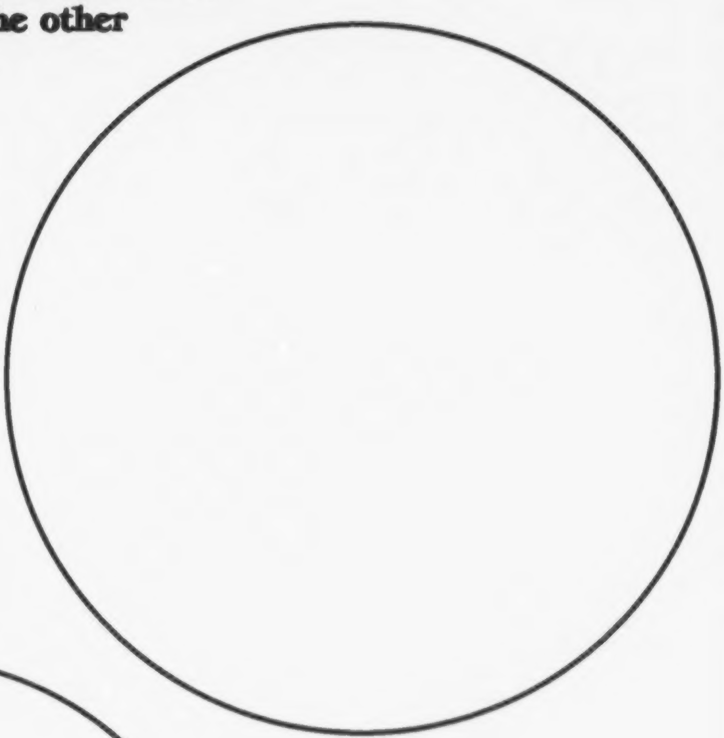
Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health and self-concept.

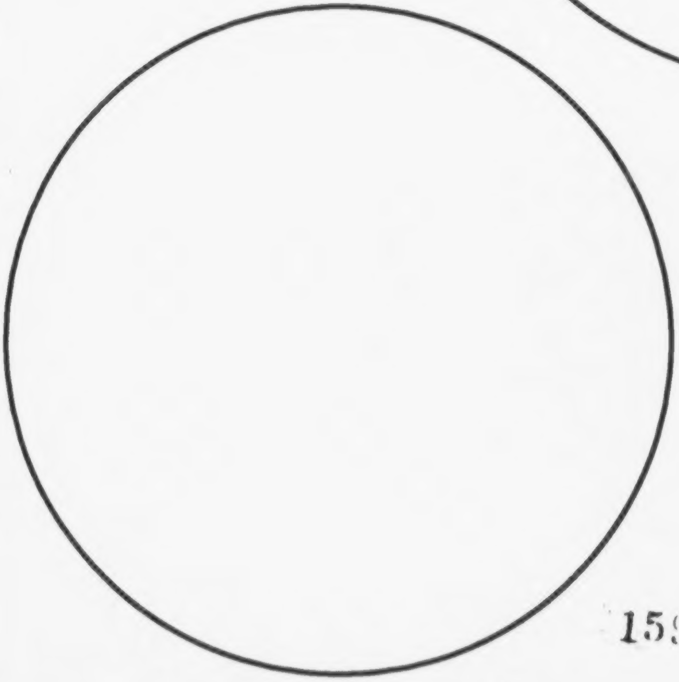
NAME ______________________________ DATE ________________

SMILE AND FROWN FACES

Directions:

Draw a smiling face on one circle and a frowning face on the other circle. Cut out each face.





Language Arts Grade K

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Discuss family food preferences.
- Investigate the customs of Native-American cultures.

ASSESSMENT CRITERIA

Identify food sources.

ACTIVITIES & STRATEGIES

Read the introductory paragraph about the Plains Indians of Texas from "Native Americans in Texas," found at the beginning of the kindergarten *ESR IV* lesson plans.

Distribute the worksheet, "Food of the Texas Plains Indians." Explain to the class that the meat that Indians ate came from animals. Ask the students to identify the animals on the worksheet. Explain how availability and lifestyle determined what they ate.

Ask the following questions:
- What was the most important food for the Plains Indians? (buffalo)
- In addition to buffalo, what other animals did they hunt? (antelope, bear, and longhorn cows)
- What other foods did they eat?
- After the buffalo had been killed and skinned, how did the Indians prepare the meat? (drying, boiling, broiling; sometimes eaten raw)
- How else did they use the buffalo? (Stomachs were used as waterbags; horns, hooves, and bones became ornaments and utensils; hair was used for ropes, thread, and strings; hides became clothing, saddles, and bedding.)
- What are your favorite family foods?

Compare the favorite foods of the Plains Indians with the favorite foods of the students' families.

Guide the students in a role play of a Plains Indian family meal. Tell them to sit in a circle on the floor in a pretend tepee and around a pretend campfire. Give each student a piece of *buffalo jerky* (really beef jerky) to eat. Explain that they are pretending this is buffalo meat.

Option:
Make an Indian headband to accompany the role play.

RESOURCES & MATERIALS

Worksheet: "Foods of the Texas Plains Indians"

"Native Americans in Texas " found at the beginning of the kindergarten *ESR IV* lesson plans

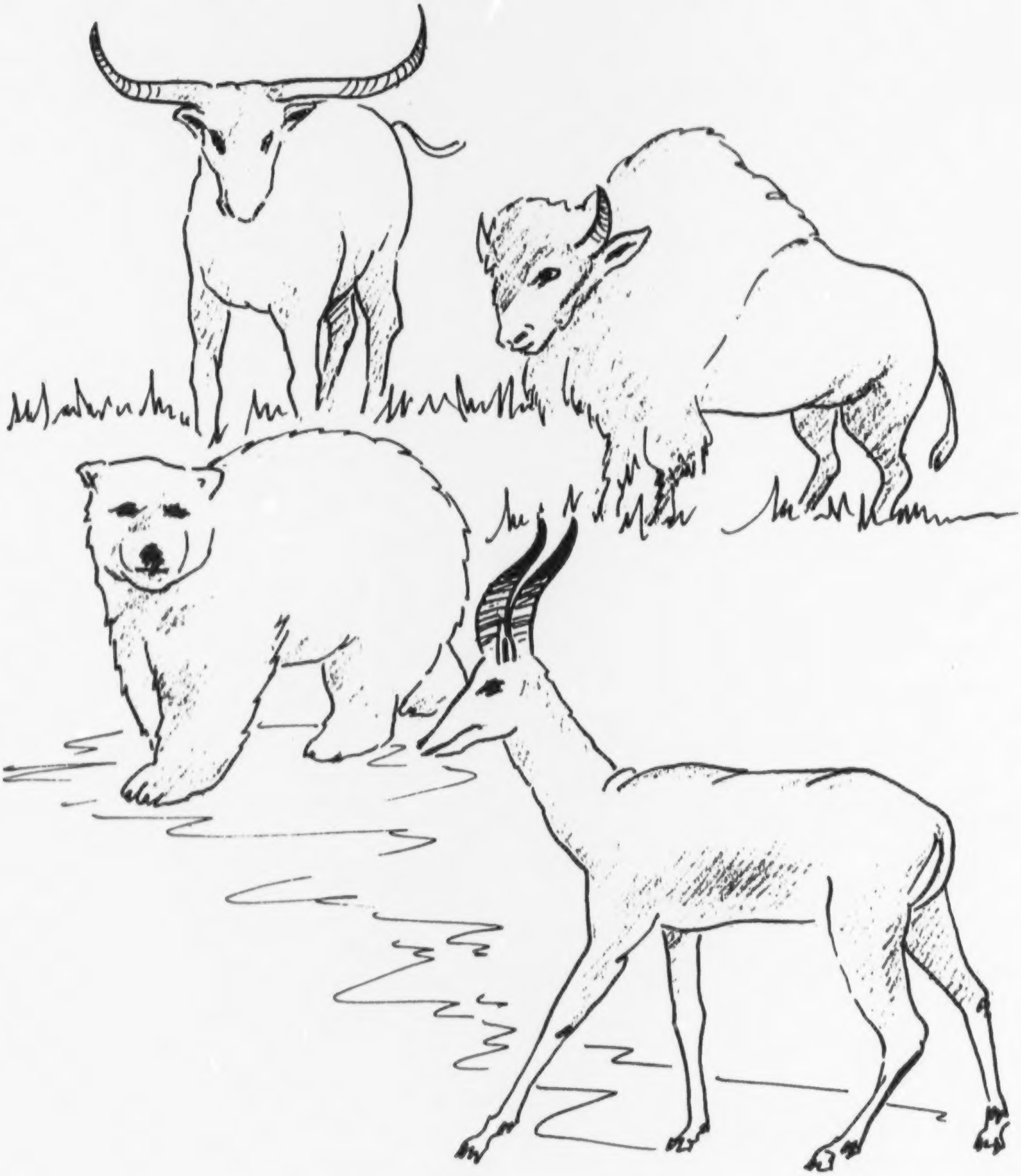
Construction paper
Beef jerky

ESSENTIAL ELEMENT

Language arts. Speaking. Developing fluency in using oral language to communicate effectively. The student shall be provided opportunities to engage in creative dramatic activities and nonverbal communication.

NAME ________________________________ DATE ____________________

Food of the Texas Plains Indians



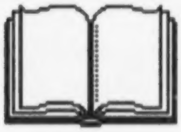
LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Identify nutritious snacks that help the body stay healthy.

Language Arts **Grade K**



K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain that eating snacks that have nutrients will help keep our bodies healthy and give our bodies strength and energy for work and play.

Eating snacks that do not have nutrients will not help our bodies stay healthy. Snacks with sugar may cause cavities and take the place of nutritious foods that we need to eat for growth and energy .

Distribute pictures of examples of healthy snacks and less healthy snacks. Tell each student to take a turn going to the front of the class to identify and classify his/her snack picture into the Healthy Snack sack or the Less Healthy Snack sack.

Conclude by reviewing the pictures of the snacks in the Healthy Snack sack. Remind students that nutritious foods help their bodies have the strength and energy for work and play. No food is "good" or "bad;" some foods are healthier than others and a nutritionally balanced meal is the key to good health.

Tell the students to wash their hands. Use the Teacher Resource: "Peanut Butter Boys and Girls" and help students mold the peanut butter playdough into the shape of their own body. Encourage the children to build their muscles in the dough character.

RESOURCES & MATERIALS

Teacher Resource: "Peanut Butter Boys and Girls"

Pictures of foods from magazines or the cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, IL 60018-4233
(708) 696-1860, Ext. 220

Children's Help Your Heart Cookbook, American Heart Association

Sack labeled: "Healthy Snack"
Sack labeled: "Less Healthy Snack"

Ingredients for peanut butter playdough:
  Creamy peanut butter
  Dry milk
  Honey
  Resealable bags
  Bowl
  Measuring cup
  Measuring spoon

In advance, ask the cafeteria manager to help provide some of the ingredients for this activity.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to listen carefully to instructions and important information.

Peanut Butter Boys and Girls

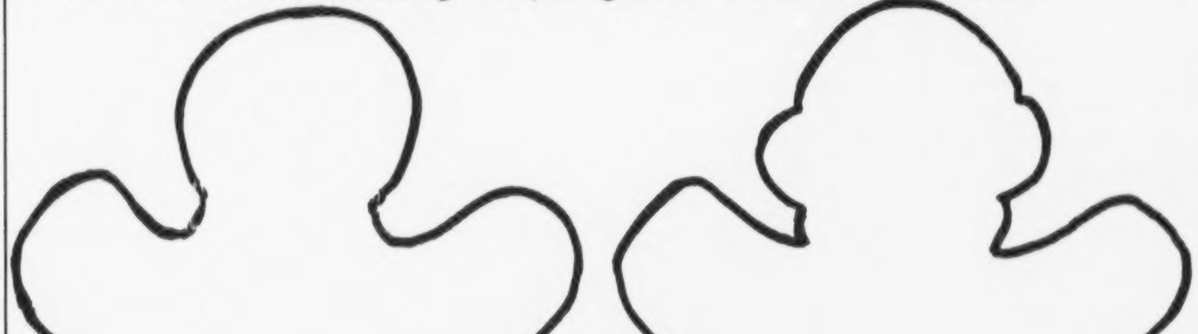
A yummy protein-playdough (enough for 20 children)

2 cups creamy peanut butter
2 1/2 cups dry milk
4 tablespoons honey

Mix all the ingredients and divide among the students.

(If the teacher would like each child to mix his or her dough individually:
Measure the following ingredients into a resealable bag:
1 heaping tablespoon creamy peanut butter
1/2 teaspoon honey
2 teaspoons dry milk solids
Tell each student to mix by squeezing the sealed bag.)

Instruct the students to mold the dough into the shape of a child or roll it between 2 sheets of waxed paper and then cut with a cookie cutter. Serve a playdough boy or girl with lunch or for a snack.



Language Arts **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Recognize the process of obtaining nutritious snack foods.

ACTIVITIES & STRATEGIES

Tell the students that they will be listening to a story that tells how Little Bear helped his mother buy food.

Read or tell the story of "Little Bear Goes Shopping," found on the teacher resource page. Ask the students these questions:
- Where do you get food?
- Where did little Bear and his mother buy their food?
- Who buys the food for your family? What do you need to be able to buy food?
- What would you buy for a snack? Is that snack food nutritious?

Lead a pretend session in which the students role play going to the grocery store, buying food, and bringing the food home. Involve the kitchen center in the classroom, if available.

Act out driving to the store and then walking around in the store looking for foods that you would enjoy eating at snack time.

Select several nutritious snacks and talk about them. After putting all the food into the grocery cart, take it to the check-out stand, and give it to the checker. After he or she rings it up on the cash register, give the checker some pretend money.

Take the groceries home and store some in the cabinets, some in the refrigerator, and some in the freezer. Then, pretend to eat some food that you picked for snack time.

RESOURCES & MATERIALS

Teacher Resource: "Little Bear Goes Shopping"

In advance, ask the cafeteria manager to talk about how food is obtained for school lunch and breakfast meals.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to listen carefully to instructions and important information.

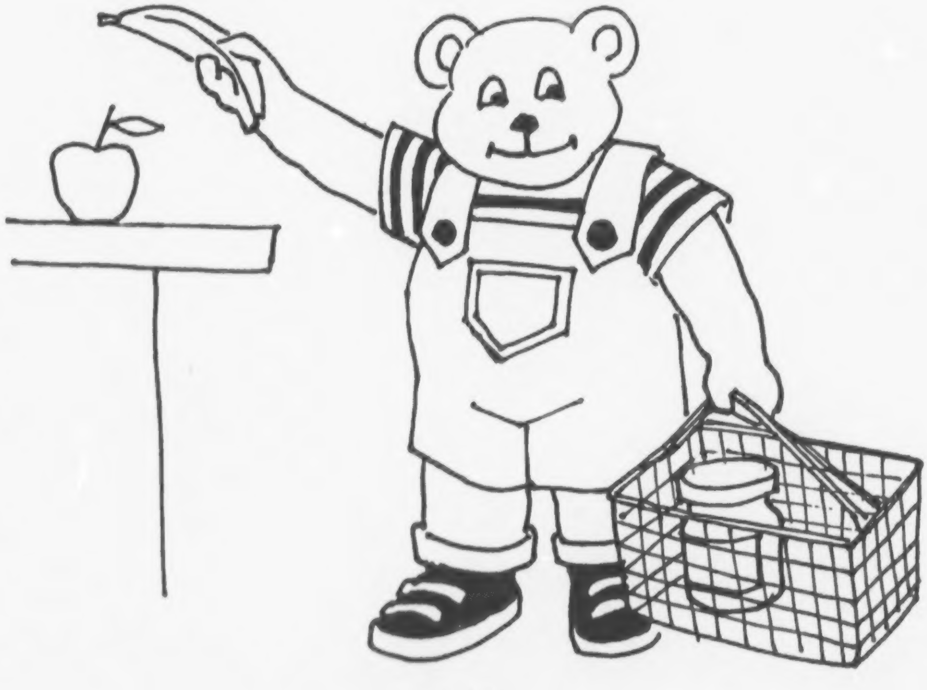
Little Bear Goes Shopping

Little Bear and his mother live in the city. Little Bear and his mother get their food at the grocery store. They get their meat, eggs, bread, milk, vegetables, fruits, and many other foods from the grocery store. Little Bear likes to give the grocery store worker the money for the food his mother buys.

One day Little Bear and his mother went shopping for snack foods for Little Bear to take to school. He chose a banana, an apple, and some peanut butter for a sandwich. Little Bear's mother let Little Bear give the grocery store worker the money for the snacks.

When Little Bear and his mother got home from shopping, they stored the food in the kitchen. Little Bear's mother was proud of Little Bear for choosing a banana, an apple, and peanut butter. She said, "Little Bear, you chose nutritious foods for snacks that will help you grow to be strong and healthy."

Little Bear was happy. He liked to go shopping for food with his mother.



LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Recognize that the body's nutrient needs are an important consideration when making food choices.

Language Arts Grade K

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Prepare flannel board pictures of a girl, cat, horse, rabbit, chicken, grandfather, grandmother, farm, school, carrot, strawberry, bread, and milk.

Read or tell the story, "Tammy's Terrific Trip" and illustrate with the flannel board pictures.

Review the important points about the story:
Tammy learns that the animals must eat nutritious foods to grow healthy and strong.

- Cat: calcium in milk makes strong teeth.
- Rabbit: vitamin A in carrots makes healthy eyes; vitamin C in strawberries heals cuts.
- Horse: vitamin B in grains (bread) gives energy.
- Grandfather: protein in meat helps to build his muscles.

Read or tell the story again, and ask the students to place the flannel board pictures at the appropriate times during the story.

Ask the students to guess the foods that were eaten by the animals and Tammy.

Tammy eats nutritious foods to grow healthy and strong.

RESOURCES & MATERIALS

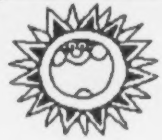
Teacher Resource: "Tammy's Terrific Trip"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Flannel board
Flannel board pictures

ESSENTIAL ELEMENT

Language arts. Reading. Using comprehension skills to gain meaning from whatever is read. The student shall be provided opportunities to respond to storytelling or oral reading by arranging the events in sequential order and retelling a story.



TAMMY'S TERRIFIC TRIP

Once upon a time, a little girl named Tammy went to visit her grandparents who lived on a farm. She had fun spending time with her grandparents.

One afternoon, she walked down to the barnyard to see the animals. A cat walked past Tammy carrying one of her kittens with her teeth.

"Hey, Mr. Cat!" yelled the girl, "Why are your teeth strong enough to hold a kitten?"

The cat said, "Your grandfather gives me milk from the cow."

"What's so good about that?" asked the girl.

The cat said, "Milk gives me calcium to build strong teeth!"

"Gee, I didn't know that," said Tammy.

Then she continued on her walk to the barnyard. Soon she saw a rabbit sitting up and waiting for her at the edge of the road. The rabbit looked so healthy! "Mr. Rabbit," said Tammy, "What makes you so healthy?"

"I eat carrots and strawberries from your grandfather's garden," said Mr. Rabbit.

"Well, what's so good about that?" asked the girl.

"Carrots have vitamin A to keep my eyes healthy, and strawberries have vitamin C to help heal my cuts," said Mr. Rabbit.

Tammy walked slowly down the road to the barn where her grandfather's horse lived. As she walked up to the fence, Mr. Horse took off running around his pen. He came to rest where Tammy had climbed up and was standing on the fence. The little girl asked, "Mr. Horse, how do you get the energy to run so fast?"

Mr. Horse replied, "I eat grains from your grandfather's fields."

"What's so good about that?" asked the little girl.

"The grains give me vitamin B to help unlock the energy from my food," replied Mr. Horse.
"Gee, I didn't know that," said Tammy.

The little girl continued past the barn to the chicken house, where her grandfather was lifting heavy pails of grain to feed the chickens. "Oh, grandfather, how can you lift those heavy pails of feed so easily?" yelled the girl.

Grandfather set down his pails of feed, looked at his granddaughter, and said, "I guess it's because I eat protein everyday and protein helps build muscles so I can lift things easily."

"Where do you get protein?" asked Tammy.

"Well, one place is from meat, like the meat from these chickens," said the little girl's grandfather.

Just then, the little girl had an idea. She ran back to the house, and found her grandmother cooking supper in the kitchen.

"Grandmother, do you think I could have a big glass of milk tonight, and some chicken, carrots, bread, and strawberries for supper?" asked the little girl.

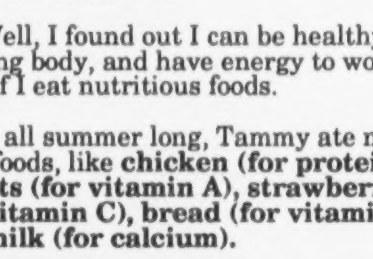
"You certainly may," said Grandmother, as she smiled a great big smile. "But why do you want **those** foods?"

"Well, I found out I can be healthy, have a strong body, and have energy to work and play, if I eat nutritious foods.

So all summer long, Tammy ate nutritious foods, like **chicken (for protein), carrots (for vitamin A), strawberries (for vitamin C), bread (for vitamin B), and milk (for calcium).**

At the end of the summer, Tammy had strong teeth like the cat, was healthy like the rabbit, could run fast like the horse, and could lift pails of grain to feed the chickens like her grandfather.

And do you know what happened when Tammy went back to school in the fall? She was smiling and running and jumping and having a wonderful time playing with her friends at school because she ate nutritious foods to stay healthy.



LESSON OBJECTIVE

Develop positive attitudes about food.

ASSESSMENT CRITERIA

Demonstrate that trying different foods can be interesting and enjoyable.

Language Arts Grade K

K

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Read the book, *Green Eggs and Ham* aloud to the students.

Ask the following or similar questions:
- What is Sam trying to serve? (green eggs and ham)
- Who does he offer this food to? (the cat in the hat)
- Does the cat in the hat want to eat the green eggs and ham? (no)
- Why would you want to try green eggs and ham?
- Why would you not want to try them?
- Did the cat in the hat try them? (yes)
- What happened? (He liked green eggs and ham.)
- What is a food that you did not think you would like, but tried it anyway and liked it?

Allow students to sample different fruits such as kiwi, mango, blackberries, papaya as well as some familiar fruits. Ask students if they liked any of the unfamiliar fruits.

Optional activities include:
- Make green eggs and ham using green food coloring.
- Read the book, *The Very Hungry Caterpillar.*

RESOURCES & MATERIALS

Green Eggs and Ham by Dr. Seuss

Small plates
Napkins
Moist towelettes
Assorted fruits such as:
  Kiwi
  Mango
  Blackberries
  Papayas
  Some fruits familiar to the students

TEACHER TIP

Tell students to wipe hands with moist towelettes before and after touching foods.

In advance, ask the cafeteria manager to assist in cutting the foods for tasting.

ESSENTIAL ELEMENT

Language arts. Reading. Using comprehension skills to gain meaning from whatever is read. The student shall be provided opportunities to respond to storytelling or oral reading by recalling important facts and details.

Mathematics **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Name the sources of food.

ASSESSMENT CRITERIA

Identify plants as a source of food.

ACTIVITIES & STRATEGIES

Explain to the students:
- Some foods come from plants.
- Some foods come from animals.

Display a variety of vegetables and fruits.

Hold up each food. Ask a student to name the food, and ask another student to determine whether the food is from a plant or an animal.

Ask the students what the displayed foods have in common. (All come from plants.)

Develop a concept of numbers and relate it to foods such as dried beans, corn, and peas, making sets of a given quantity. For example, a set of five students could glue five beans in a box or a set of two students hold two peas.

Identify and count the foods from plants in one day's lunch menu.

Ask the students to look at the worksheet, "Plenty of Food From Plants." Explain that each of the foods is a fruit or vegetable and comes from a plant. Identify each of the fruits. Identify each of the vegetables.

Read the instructions to the students. Allow them to complete the worksheet then review the questions.

RESOURCES & MATERIALS

Worksheet: "Plenty of Food From Plants"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

"Project TEACH," Texas Department of Agriculture

School lunch menu
Assortment of vegetables and fruits.

Teacher Tip

Be aware that some students may be vegetarians.

Obtain a lunch menu from the cafeteria manager.

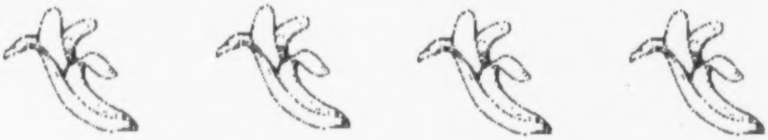
ESSENTIAL ELEMENT

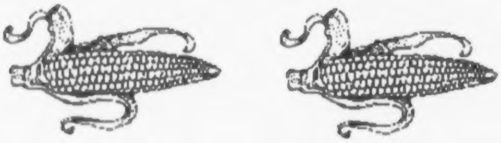
Mathematics. Concepts and skills associated with the understanding of numbers (whole, integer, and non-negative rational) and the place-value system. The student shall be provided opportunities to experience at the readiness level number concepts and counting (objects).

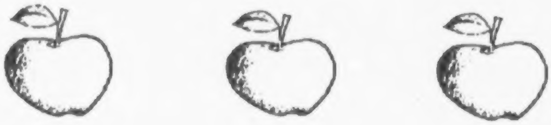
NAME ______________________ **DATE** ______________

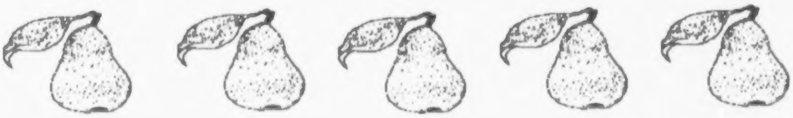
Plenty of Food From Plants

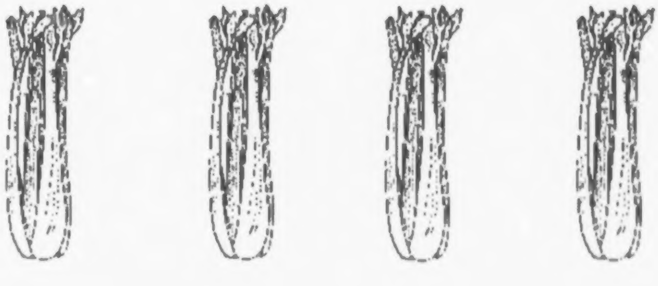
Count the objects in each set.
Write the number on the space beside each set.

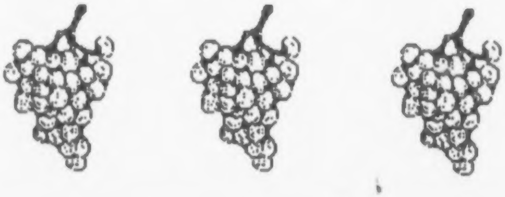
1.  ________

2.  ________

3.  ________

4.  ________

5.  ________

6.  ________

LESSON OBJECTIVE

Develop positive attitudes about food.

ASSESSMENT CRITERIA

Identify height as an indicator of growth.

ACTIVITIES & STRATEGIES

Make and post the Growth Tree poster and put a tape measure next to the tree as pictured on the worksheet, "Food Helps ________________ Grow."

Ask the students to name fruits that grow on trees. Explain that the class will make a fruit tree. Give each student a fruit cutout (with tape on the back of the cutout.)

Ask the students to use their hands to demonstrate how tall they were when they were babies.

Ask them to show how tall they are now. (Rest hands on top of heads.)

Ask them about what made them grow. Explain that eating nutritious foods made them grow.

Tell the students to stand with their backs to the Growth Tree in front of the tape measure and place his or her fruit cutout at head level to represent their height.

Ask the students to point to the number on the Growth Tree tape measure to indicate his or her height. Record the student's height on the worksheet, "Food Helps ________________ Grow."

Repeat the activity in a few months and raise the fruit to a new height to reinforce the concept of growth.

Explain that food helps the students grow, but that different students grow at different rates.

RESOURCES & MATERIALS

Worksheet: "Food Helps ________________ Grow"

A poster-size picture of the Growth Tree (Add a tape measure to the tree.)

Fruit cutouts from construction paper
Tape measure
Scales

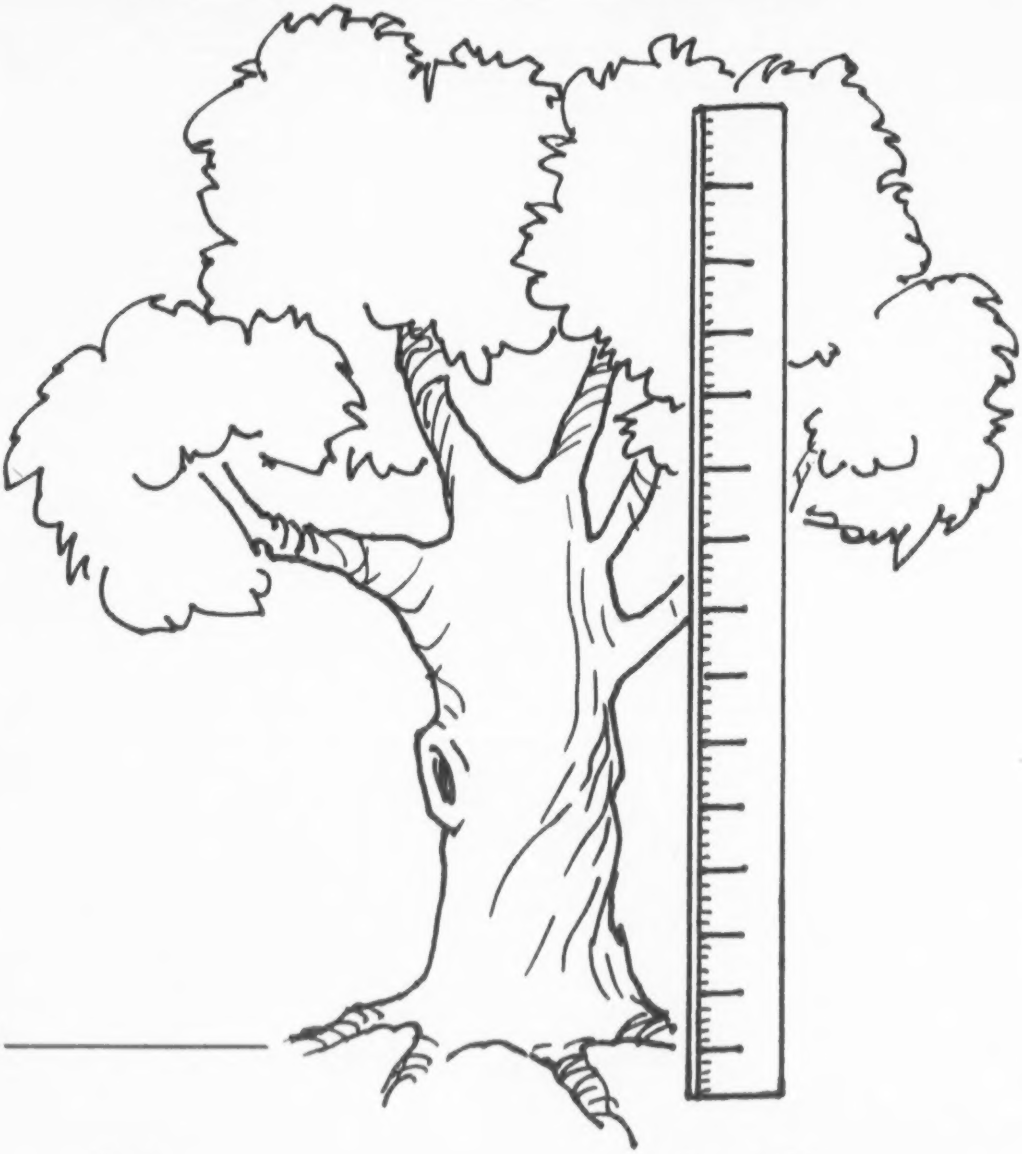
ESSENTIAL ELEMENT

Mathematics. The representation of numbers on a line, and pairs of numbers on a coordinate plane. The student shall be provided opportunities to experience at the readiness level ordering points on a line.

Food Helps ______________ Grow

Date: ____________

I am ____________________ inches tall.



Date: ____________

I am ____________________ inches tall.

LESSON OBJECTIVE

Identify foods in different forms using all five senses.

ASSESSMENT CRITERIA

Match foods with the appropriate products.

ACTIVITIES & STRATEGIES

Discuss with students different ways that foods can be changed into new forms.

List some examples: squeeze oranges to make juice, churn cream to make butter, purée tomatoes to make spaghetti sauce.

Use the following suggestions to demonstrate the real process for one food:
- Squeeze orange juice from oranges with a hand juicer.
- Applesauce could be made from cooked apples using a blender.
- Make butter by shaking whipping cream in baby food jars.
- Make peanut butter from peanuts using a blender.
- Make spaghetti sauce from tomatoes using a blender.

Set up various items or pictures of these food items on a table for students to match.

Distribute, read instructions, and ask students to complete the worksheet, "Food Matching."

RESOURCES & MATERIALS

Worksheet: "Food Matching"

Construction paper
Foods for the selected demonstration:
  Orange/Orange Juice
  Apple/Applesauce
  Milk/Cheese or Butter
  Peanuts/Peanut Butter
  Others you may think of

TEACHER TIP

Ask students in advance to bring any of the foods necessary for the demonstration.

In advance, ask the cafeteria manager to demonstrate making one of the food suggestions.

ESSENTIAL ELEMENT

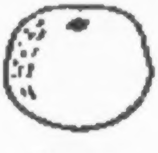
Science. The use of classification skills in ordering and sequencing data. The student shall be provided opportunities to classify objects by comparing similarities and differences.

NAME ______________________________ DATE ________________

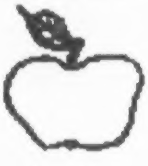
Food Matching

Instructions: Color the pictures. Cut out each picture on the dotted line. On a piece of construction paper, match the food from the left column to one which is the same food in a different form from the right column.

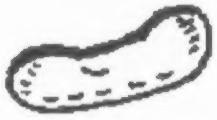
After the pictures have been matched, glue them to the construction paper.



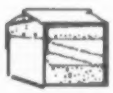
Orange



Apple

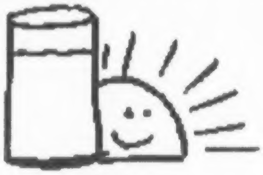


Peanut

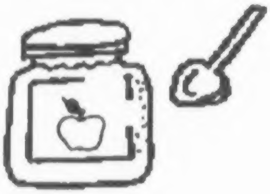


Whipping cream

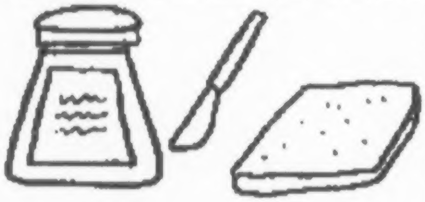
Butter



Orange Juice



Applesauce



Peanut Butter

LESSON OBJECTIVE

Discuss nutritional needs of four, five, and six year olds.

ASSESSMENT CRITERIA

Recognize the importance of nutritious and healthy drinks.

ACTIVITIES & STRATEGIES

Demonstrate that soft drinks are not the best choice for the body, and that it is important to choose healthy drinks.

Fill one clear glass with water and the other clear glass with a dark cola drink, and drop a piece of eggshell into each glass. Each day, observe changes that occur to the eggshells and compare the color of the eggshells in the two glasses.

At the end of two weeks, explain that what has happened to the eggshell soaked in the cola drink can happen to students' teeth.

Ask the following questions:
- What has the cola drink done to the eggshell?
- Why does this happen so quickly to the eggshell soaking in the cola drink?

Discuss that drinking water is healthier than drinking a soft drink. Water is the single most important food substance and is available in liquids as well as in fruits and vegetables.

Water carries nutrients and waste through the body, helps keep body temperatures even, and keeps the joints and muscles flexible. Water helps you look and feel your best. Remind students to drink water, fruit and vegetable juices, or milk and to limit soft drinks.

Distribute cups to the students. Pour water into their cups and tell them to drink and enjoy their water break.

RESOURCES & MATERIALS

Several eggshells
Two clear glasses
Cups
Pitcher of water
One dark cola drink

TEACHER TIP

Check with your dentist for a tooth-like material that can be used in this activity instead of eggshell.

ESSENTIAL ELEMENT

Science. Shall have a balance of content and activities from the life, earth, and physical sciences. Manipulative laboratory skills. The student shall be provided opportunities to use comparators: color, texture, taste, odor, size, shape, direction, motion, heat/cold, sink/float, sound.

Science **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify different foods.

ASSESSMENT CRITERIA

Identify various foods by comparing and contrasting the size, weight, and texture.

ACTIVITIES & STRATEGIES

Present a basket of fruits and vegetables to students. Discuss the similarities and differences of each fruit and vegetable (size, shapes, color, texture of outer covering, etc.).

Ask students to rank two or three of the foods by size such as length or height.

Blindfold a student volunteer in front of the class and present the student with a fruit or a vegetable. Ask the student to identify it by touching or smelling it. Repeat with all the samples.

Conclude with washing and cutting the fruits or vegetables into pieces for students to eat as snacks. Give students the worksheet, "My Favorite Fruits and Vegetables," read the instructions, and allow them to color it after eating their snacks.

Sing "Apples and Bananas," a song by Raffi.

RESOURCES & MATERIALS

Worksheet: "My Favorite Fruits and Vegetables"

Raffi Album: *Singable Songs for the Very Young*, 1976, Troubadour Records, Ltd. MCA Records Stock # MCA-10037, $10.95

Blindfold
Basket
Fruit and vegetables such as:
- Apples
- Bananas
- Oranges
- Peaches
- Carrots
- Celery
- Cucumbers
- Zucchini
- Onions
- Cantaloupes
- Green peppers
- Tomatoes
- Lemons
- Limes

TEACHER TIP

Tell students to wash hands before eating snacks. Talk about food and good hygiene.

In advance, ask the cafeteria manager to provide fruits or vegetables, or to assist in cutting the food and/or provide cutting boards and knives.

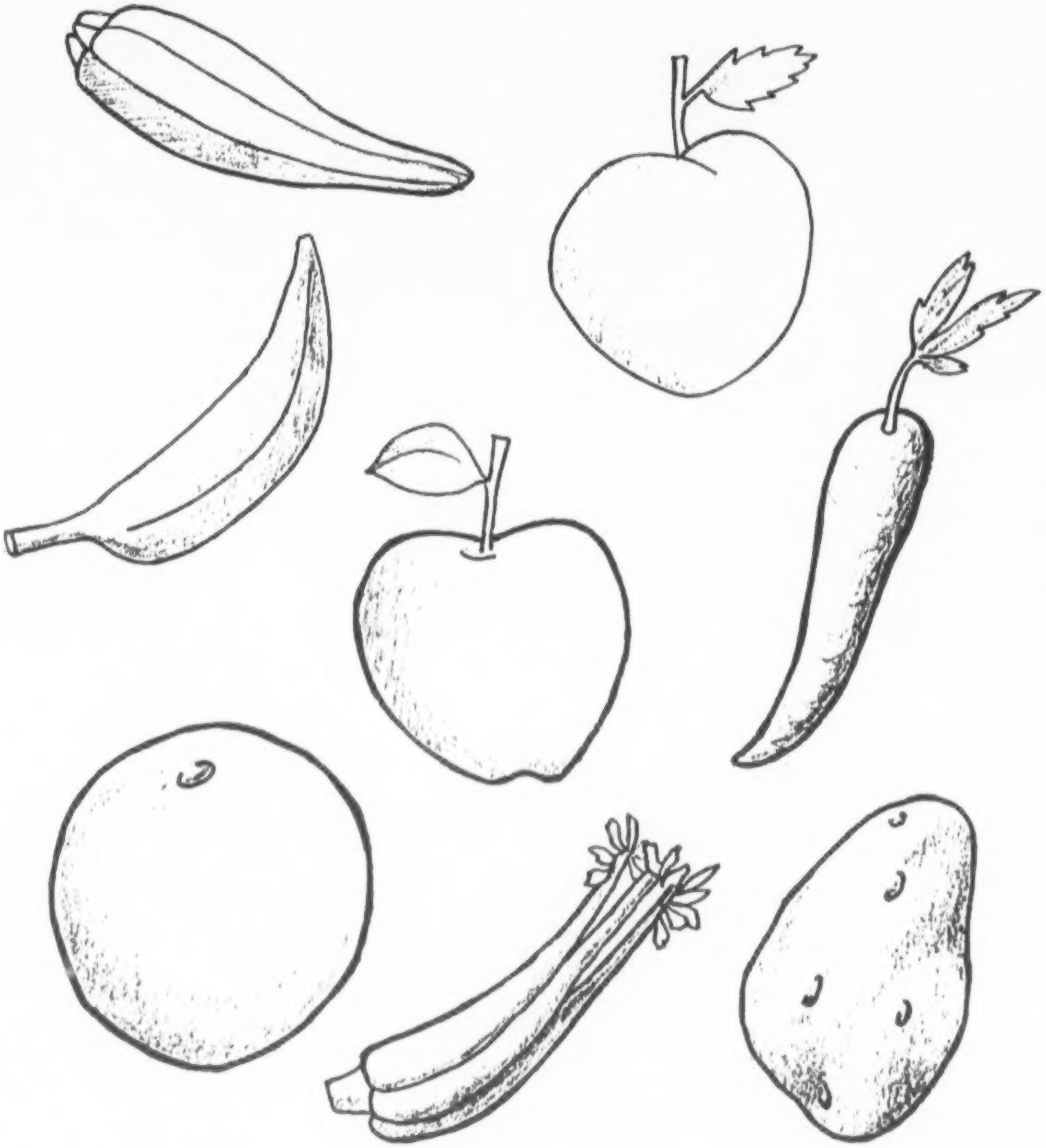
ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to use the senses.

NAME ________________________________ **DATE** ____________________

My Favorite Fruits and Vegetables

Color the fruits and vegetables.
*Circle the ones that were **NOT** used in the activity.*



Science **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Demonstrate proper handwashing practices to ensure food safety in the classroom and the cafeteria.

ACTIVITIES & STRATEGIES

Discuss why we need to wash our hands. Explain that bacteria and germs on our hands may be transferred to the food we put in our mouths and can cause illness.

Ask the students to touch their skin. Explain that skin is similar to the plastic wrap we use for our sandwiches. It keeps us from drying out and protects us from dirt and germs. Demonstrate how skin protects us by wrapping plastic around a piece of fruit.

Explain that a snake can shed skin all at once, but a person sheds a little skin everyday. Pass a snake skin around for the students to feel and see.

Explain that we get rid of dead skin, dirt, and germs when we rub our hands together with soap, water or washing our hands. Distribute the handout, "Clean Hands."

Explain the importance of proper handwashing before touching food. Tell the students to wash their hands to get rid of dead skin cells and germs.

Demonstrate the five steps in hand washing.
1. Wet the hands with water.
2. Lather the hands with soap.
3. Scrub the hands together.
4. Rinse the hands with water.
5. Dry the hands with a clean towel.

Let students help make fruit lollipops.
1. Wash fruit.
2. Cut fruit into bite-size pieces.
3. Put the fruit pieces on toothpicks or pretzels. (Have a container available for used toothpicks.)

Enjoy a "Fruit Lollipop Tasting Party."

RESOURCES & MATERIALS

Handout: "Clean Hands"

Snake skin
Toothpicks or pretzels
Plastic wrap
Fresh fruit pieces

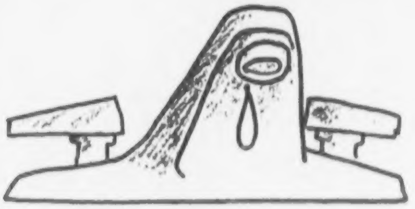
n advance, ask the cafeteria manager to explain to the class the specific guidelines that are followed in the cafeteria regarding sanitation.

ESSENTIAL ELEMENT

Science. Shall have a balance of content and activities from the life, earth, and physical sciences. Manipulative laboratory skills. The student shall be provided opportunities to practice safety.

NAME ______________________________ **DATE** ________________

Clean Hands



water

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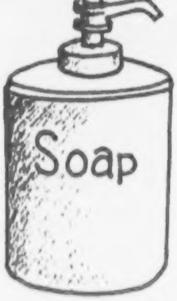

Soap

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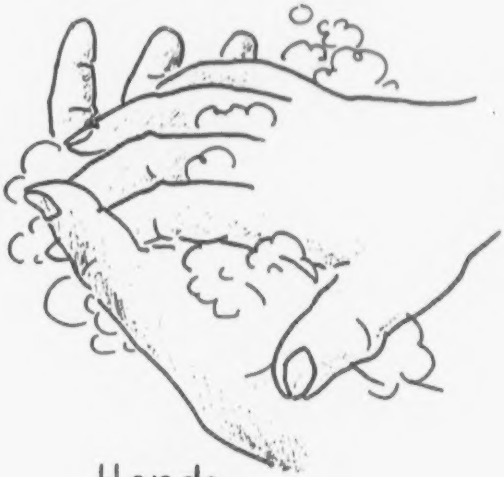

Hands

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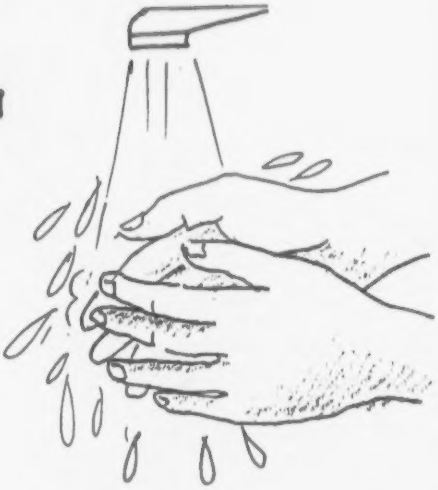

water

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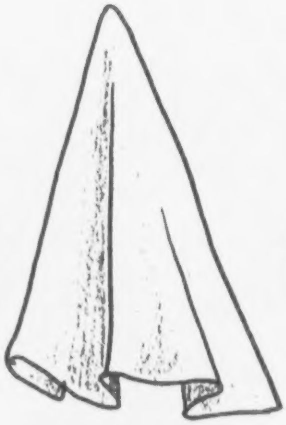

Towel

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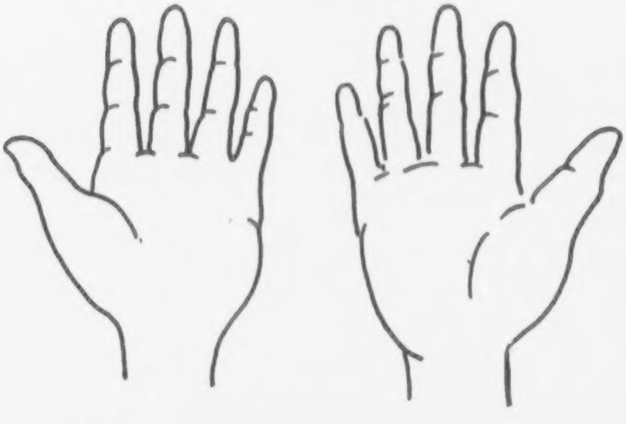


clean hands

ESR IV
TEXAS EDUCATION AGENCY

Social Studies **Grade K**

K

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Examine food traditions.
- Investigate the customs of Native-American cultures.

ASSESSMENT CRITERIA

Identify the food of Native American cultures.

ACTIVITIES & STRATEGIES

Use the teacher resource, "Native Americans in Texas." Tell the story of how Texas was named.

- The Caddoe Indians had several bands or members of the tribe who joined together for a common purpose similar to a troop.
- One of the bands called each other *Taychas,* which meant *friend.* The Spanish referred to the Caddoes as *Taychas,* pronouncing it as Tejas. The word was later changed to Texas.

The Caddoes had an unusual custom of greeting visitors. The Caddoe tribe greeted outsiders with weeping, wailing noises, and tears. It was their way of saying, *Hello.* Ask the students to pretend they are Caddoe Indians and to greet each other with weeping, wailing noises, and tears.

Distribute the handout, "The Caddoe Indians in Texas." Explain that the Caddoes lived in villages along the rivers and creeks in East Texas. Their food sources included corn, beans, figs, peaches, pumpkins, squash, sunflower seeds, and watermelon. They hunted deer, buffalo, bear, snakes, ducks, rabbits, and wild turkeys. They gathered nuts and berries. The Caddoes were also excellent fishermen. With the students' help, select some of these foods and plan a Caddoe Indian meal.

Direct the students to sit in a circle with their legs crossed, Indian style. Sample some of the foods eaten by the Caddoe Indians.

RESOURCES & MATERIALS

Handout: "The Caddoe Indians in Texas"

"Native Americans in Texas " found at the beginning of the kindergarten *ESR IV* lesson plans

Food samples

In advance, ask the cafeteria manager to plan an "Indian" meal in the cafeteria.

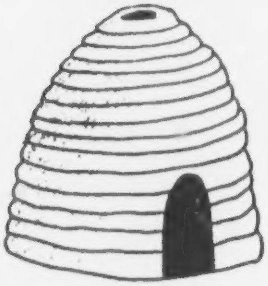
ESSENTIAL ELEMENT

Social studies. The American economic system. The student shall be provided opportunities to identify basic economic wants (food, clothing, shelter) of all people.

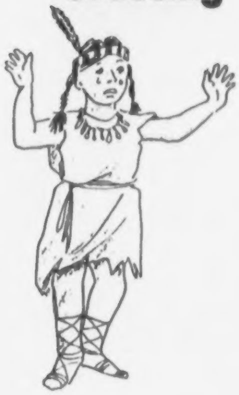
The Caddoe Indians in Texas

Location

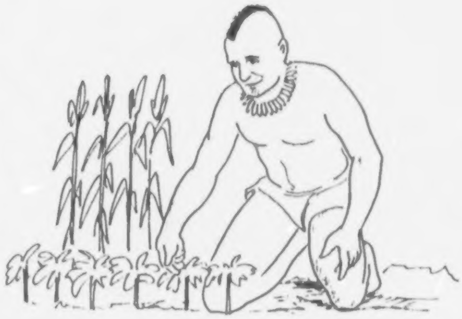
Housing

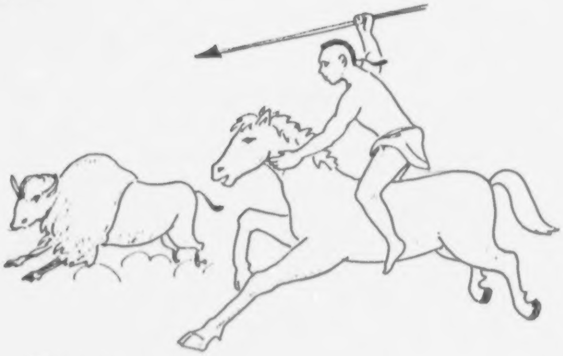


Greeting

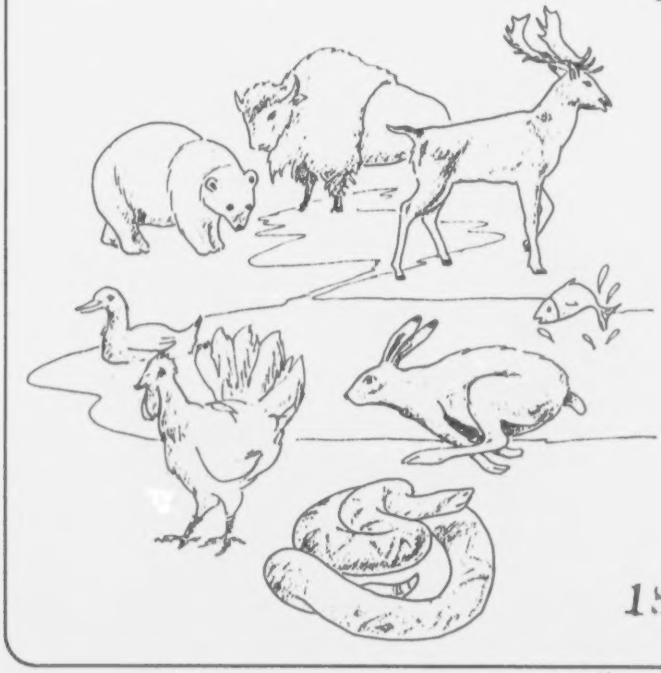


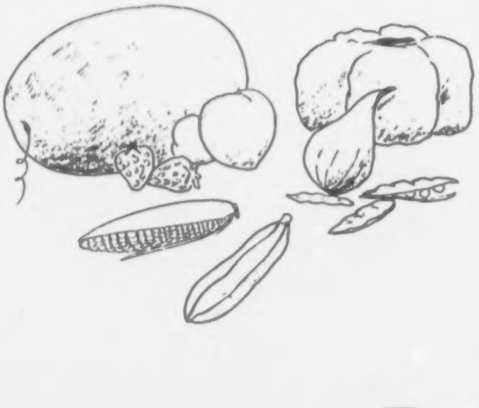
Work





Food





Education for Self-Responsibility IV:

NUTRITION EDUCATION

GRADE 1

ESR IV

TEXAS EDUCATION AGENCY

Mexican Americans in Texas

Grade One

Hispanics in the United States are a uniquely diverse group of people who can trace their ancestry to Mexico, Cuba, Puerto Rico, other Central and South American countries and other cultures originating in Spain, or Hispania. Hispanics are currently the largest ethnic group in Texas followed by African Americans and Asian Americans. Currently, the Mexican Americans are the largest Hispanic group in the United States as well as in Texas. Although some Hispanics are recent immigrants, others have ancestry in Texas dating back more than three hundred years.

After the arrival of Hernan Cortez in 1519, Mexico, Cuba, and Puerto Rico were ruled by Spain. Mexico remained under Spanish rule until the end of the Mexican Revolution in 1821, but Cuba and Puerto Rico remained under Spanish control until the end of the Spanish American war in 1898. All three countries share a common cultural background stemming from the fusion of Spanish and Native American cultures.

During the time of Spanish rule, pioneers from the United States were allowed to settle in the area now known as Texas. In the early 1800s the Spanish government issued ***land grants,*** pieces of land given to individuals by the government, to entice people to settle in Texas. ***Empresarios*** were people who got land grants and brought in large groups of people to form colonies or settlements in a particular area of Texas. Moses Austin was one of the first empresarios who negotiated a land grant with the Spanish government, but he died before he could carry out his plan. His son, Stephen F. Austin, took over his efforts, but during his negotiations, Mexico won its independence from Spain; he had to renegotiate his plans with the new Mexican government.

By 1821, Mexico had won its independence from Spain, and in 1824 the Mexican government approved a constitution which included regulations for the continuation of immigration to Texas. U.S. immigrants typically settled in the eastern portion of the state, but the Native Mexicans moved northward from Mexico and established ranch sites or ***rancherios*** along both sides of the San Antonio River. In the area of present day Nacogdoches, approximately fifty rancherias existed and provided the foundation for future Texas towns such as Goliad, Nacogdoches, and Victoria.

Immigration was allowed for the next ten years only to be repealed by Mexican President Antonio Lopez de Santa Anna when he consolidated his powers as dictator. People from Mexico and Europe were still allowed into Texas, but people from the United States were forbidden. Many people protested the dictatorship, and clashes took place between small groups of people in Mexico and Santa Anna's army. The majority of people in Texas also disagreed with Santa Anna and his dictatorship. On March 2, 1836, Texas declared its independence from Mexico. There were many Mexican Texans who fought with the Texans to win independence, and it is estimated that one-third of the Texan soldiers that fought against the troops of Santa Anna were Mexican Texans. After massacres of Texans by Santa Anna's armies at the Alamo and Goliad, Texas defeated Santa Anna's troops at San Jacinto and became an independent republic in June of 1836.

After Texas gained its independence, land titles were given to many Mexican Texans in recognition for military service. This group, coupled with those families who held original land grants from Spain and Mexico, comprised a large and influential group of citizens at the beginning of the Republic of Texas. In addition to their contributions to the Texas Revolution, Mexicans have also contributed in other ways to the culture and welfare of Texas.

The influence of Spain on Mexico and Mexico's influence on Texas was significant. The Spanish brought to Mexico a new race, a new economic and political system, a new style of architecture, a new religion, and influenced the cultural, as well as the physical development of the Mexican culture. Many Mexican Texans are descendants of the fusion of the early Spanish settlers and the Indian tribes of Mexico and Texas; members of this new race were called ***mestizos***. The language of Mexico is Spanish, which is still spoken throughout Texas, especially in the southern region. Spanish language newspapers, radio, and television stations can be found all across Texas, and many Texans are bilingual (speak both English and Spanish).

The Spaniards brought their religion of Catholicism to Mexico, and Spanish friars and priests from Mexico came to Texas with the intent of teaching the Native Americans about Christ and the Spanish way of life. The Spanish government built missions which served as church institutions within towns or settlements. The Alamo is one famous mission, originally called the San Antonio de Valero Mission, which was established as part of the Spanish attempt to settle Texas. As Spain began to lose control of its claimed territories, the Alamo and other missions were used by the military to forestall the advances of other nations into Spanish lands. Many towns often retained their

Spanish names or were named after Spanish missions located near communities, such as Nacogdoches (Nuestra Senora de Guadalupe de los Nacogdoches) and San Jose (San Jose Mission).

The Spanish and Mexican influence upon architecture is still noticeable among the mission style structures in Texas and the southwest part of the United States. The original architecture was a combination of Native American adobe construction and roofs covered with Spanish tiles in shades of red. Mission structures were built around a common courtyard and included arched windows and doors, wrought iron exterior decor, and stucco (a type of plaster applied to exterior walls).

Mexican laws influenced the writing of the Texas constitution and many of Texas' laws, such as the separate property law and the homestead law. Through the separate property law, Texas became the first state in the Union to guarantee a married woman the property that belonged to her at the time of her marriage or that she acquired through gift or inheritance. The homestead law provided security for home owners by exempting the place where a family makes its home (its homestead) from seizure or forced sale to meet general debts. After Texas became a state of the Union, many other states adopted similar laws which have some foundations in Mexican jurisprudence or philosophy of law.

Food is another major influence of the Mexican culture in Texas. Mexican food was improvised by using simple cooking facilities, techniques, and available foods. Mexican foods in Texas differ somewhat from the traditional dishes of Mexico. The most commonly used foods among Mexican Texans include beans, beef, bread, chicken, chocolate, cheese, eggs, sugar, and tortillas. The most highly used seasonings include cilantro, coriander, cumin, garlic, onions, and peppers of various types.

The social life for some Mexican Texans includes the traditional Mexican entertainment forms of dancing, sports, and festivas or festivals which are held in observance of special days. Religious holy days observed by some include December 12, commemoration of the date of the apparition of the Virgin de Guadalupe to the Indian Juan Diego in Mexico City in 1521; November 2, All Souls' Day; and December 25, Christmas Day. Mexican historical holidays include September 16, el Diez y Seis de Septiembre which commemorates Mexican independence from Spain; and May 5, Cinco de Mayo, which commemorates the victory at the Battle of Puebla in 1862 when French forces were defeated by Mexican forces after invading La Puebla (the struggle with the French lasted five more years, but the May 5 victory gave the Mexicans a strong sense of unity and a reason to fight to save their independence).

Brownsville holds an annual four-day fiesta called ***Charro Days*** which celebrates the role of Mexican cowhands (charros or vaqueros) in Texas history. Participants dress in traditional Mexican clothes, dance, sing, eat, and put on shows.

Today, approximately three million or 18 percent of Texans are of Mexican birth or descent. These numbers represent the state's strong ties with its past and emphasize their importance to the state's future.

LESSON OBJECTIVE

Explain the importance of the safe handling of food.

ASSESSMENT CRITERIA

- Identify the importance of sanitation during food preparation.
- Create a nutritious snack.

ACTIVITIES & STRATEGIES

Explain that we come in contact with many germs every day. Most illness from food results from germs that have lived on food and multiplied millions of times. It is very important to keep things clean during the process of food preparation because it is easy to transmit germs from your hands to the food which may cause illness.

Discuss the following steps for clean food preparation:
- Wash hands with soap.
- Use clean dishes and utensils.
- Wear clean clothes.
- Clean work surfaces with soap and water before and after each use.

Encourage the students to describe their favorite sandwiches by asking the following questions:
- What is the most delicious sandwich you have ever eaten?
- What is the largest? What is the smallest?
- What is the most fancy?
- What is the most unusual?
- Where did you eat the sandwiches?
- Who prepared the sandwiches?

Ask the students to name and discuss some different types of breads and some fillings used for making sandwiches.

Explain that the students will help make an Artful Sandwich. Before preparing the sandwich, follow the suggested steps for clean food preparation. After the students have washed their hands, create an Artful Sandwich with a long, large, sliced loaf of French bread. Allow each student to add a filling to the sandwich.

Create a name for the unusual Artful Sandwich, and serve a portion of it to each student.

RESOURCES & MATERIALS

Knife
Napkins
Long, large loaf of French bread
Variety of sandwich fillings

In advance, ask the cafeteria manager to provide one long loaf of bread, lettuce, and tomato for the sandwich.

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, and constructing three-dimensional forms.

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Explain the importance of breakfast.
- Make wise food choices at mealtime.

ASSESSMENT CRITERIA

- Discuss the importance of breakfast.
- Name nutritious breakfast foods.

ACTIVITIES & STRATEGIES

Ask students why they think breakfast is important.

Explain the following information about breakfast:
- Breakfast is the most important meal of the day.
- The term *breakfast* means to break the fast.
- When people wake up, their bodies have been without food for 10-12 hours.
- Not eating breakfast may result in feeling tired and irritable and in being unable to pay attention. People cannot expect to do their best if they have not eaten breakfast; because breakfast provides fuel for their bodies.
- Any nutritious food may be eaten for breakfast.

Allow students to discuss foods that they currently enjoy eating for breakfast.

Poll the class to count the number of students who eat breakfast in the cafeteria. Ask them to name their favorite food(s) served in the school breakfast.

Point out that scrambled eggs, pancakes, or cereal, are traditional breakfast foods which may be eaten at other meals. Allow the class to discuss other traditional and non-traditional foods that can be eaten as breakfast foods. Offer these suggestions:
- yogurt and fruit
- peanut butter and jelly sandwiches
- cheese and crackers
- leftover main dish foods

Instruct students to look through magazines and collect pictures of traditional and non-traditional foods that may be eaten for breakfast. Make collages with these pictures, and display them in the cafeteria, if possible.

RESOURCES & MATERIALS

Magazines
Construction paper
Glue
Scissors

TEACHER TIP

When polling students regarding participation in school breakfast, do not ask how many students eat free or reduced school breakfast. Simply ask how many have eaten in the cafeteria.

In advance, check with the cafeteria manager for assistance in displaying collages in the cafeteria.

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, and constructing three-dimensional forms.

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

Recognize that a variety of fruit and vegetables of different colors can provide adequate amounts of vitamins.

ACTIVITIES & STRATEGIES

Display a basket of fruits and vegetables with every color of the rainbow represented. If possible, include eggplant, sweet potato, blue plum, green pepper, and purple cabbage. Ask the students to name each of the fruits or vegetables in the basket.

Explain to the class that all the colors of the rainbow can be seen in fruits and vegetables. Many fruits and vegetables are excellent sources of vitamin A and vitamin C.

Vitamin A is important to your body for night and color vision, growth of bones and teeth, and healthy skin. Vitamin C is important to help you fight infection and heal wounds. Choosing a variety of colors of fruits and vegetables helps you obtain the necessary amounts of vitamins A and C.

Attach to the wall a large rainbow that has been prepared on butcher paper.

Ask students to name each color in a rainbow and then name fruits or vegetables that match the rainbow colors.

Distribute and review the worksheet, "I Can Eat A Rainbow," and help the students identify the colors of some of the unfamiliar foods such as eggplant, sweet potato, and blue plums. Encourage the students to draw additional fruits and vegetables for each rainbow color.

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

RESOURCES & MATERIALS

Worksheet: "I Can Eat A Rainbow"

A large rainbow drawn on butcher paper
Large basket of colorful fruits and vegetables
(See the worksheet for ideas.)

Answer Key

WHITE:	**cauliflower, onions**
RED:	**strawberries, tomatoes**
ORANGE:	**carrots, oranges**
YELLOW:	**corn, grapefruit**
GREEN:	**broccoli, green apples**
BLUE:	**blueberries, blue plums**
PURPLE:	**eggplant, purple grapes, purple cabbage**

Teacher Tips

- **For enrichment, wash, slice, and let the students try some of the fruits and vegetables that can be eaten raw.**
- **Provide nutritious dips for the fruits and vegetables.**

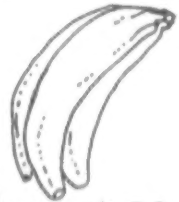
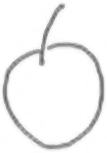
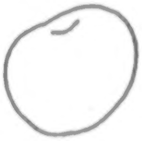
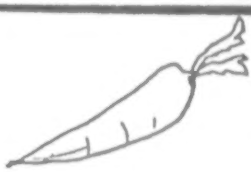
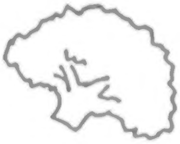
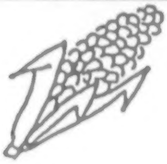
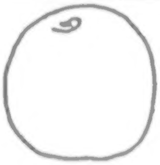
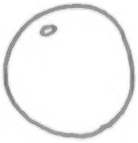
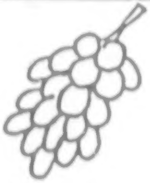
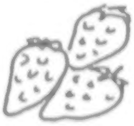
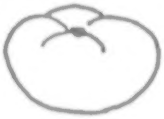
ESSENTIAL ELEMENT

Fine arts. Art. Awareness and sensitivity to natural and man-made environments. The student shall be provided opportunities to discover line, color, shape, and texture by seeing and feeling objects.

NAME ____________________ **DATE** ____________

I Can Eat A Rainbow

Color each food picture in the boxes below. Cut out each block and glue it on the corresponding color band of the rainbow on the wall.

 bananas	 blueberries	 blue plums	 broccoli
 carrots	 cauliflower	 corn	 eggplant
 grapefruit	 green apple	 onion	 orange
 purple grapes	 purple cabbage	 strawberries	 tomato

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss nutritional needs of six and seven year olds.

ASSESSMENT CRITERIA

- Identify foods that are high in calcium.
- Explain the importance of calcium for healthy teeth and bones.

ACTIVITIES & STRATEGIES

Explain to the students that foods high in calcium are important to help our bodies, especially our teeth and bones, grow healthy and strong.

Ask students to name some specific foods that are high in calcium. Refer to the worksheet, "Bone Builders."

Distribute the worksheet, "Bone Builders."
- Tell students to choose their five favorite high-calcium foods from the bones on the worksheet.
- Instruct students to build a Happy Body on another sheet of paper with the five chosen bones. Refer to the example in the resource column.
- Tell students to add a happy face for the head.

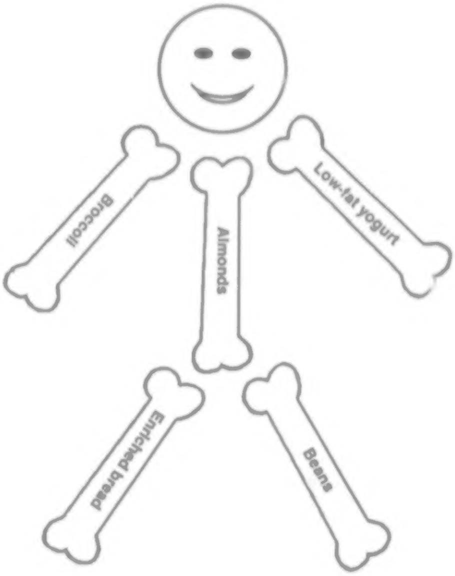
Ask some students to show their bone pictures to the class and give the names of some high-calcium foods.

RESOURCES & MATERIALS

Worksheet: "Bone Builders"

Paper
Pencils
Glue or paste
Scissors

Example of a Happy Body:



TEACHER TIP

Remind students that all milk (1%, skim, whole, etc.) has equal amounts of calcium. Fat content does not affect nutrient (calcium) content.

ESSENTIAL ELEMENT

Fine arts. Art. Awareness and sensitivity to natural and man-made environments. The student shall be provided opportunities to discover line, color, shape, and texture by seeing and feeling objects; and understand formal structure in art including unity and emphasis.

NAME ______________________________ DATE ____________________

Bone Builders

Choose five favorite high-calcium foods below. Use scissors to cut out your choices. On another sheet of paper, paste the five bones to build a Happy Body. Add a happy face for the head. Remember that healthy bodies are happy bodies!

- Pudding
- Buttermilk
- Canned salmon
- Cottage Cheese
- Enriched bread
- Figs
- Almonds
- Beans
- Broccoli
- Low-fat milk
- Ice Cream
- Low-fat cheese
- Fortified orange juice
- Low-fat Yogurt

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss family food preferences.

ASSESSMENT CRITERIA

- Identify favorite family activities and the foods associated with these activities.
- Categorize foods according to the food groups.

ACTIVITIES & STRATEGIES

Ask the students to name several activities that their families enjoy doing together. List each different activity on the board.

Ask the students to name the food(s), if any, that they associate with each activity, and list the food(s) next to that activity on the board.

Review with the students the food groups as listed in "Appendix C: A Pattern for Daily Food Choices." Categorize each of the foods stated above according to the food groups in the guideline.

Point out to the students that just as every family enjoys doing different activities, they also enjoy eating different foods. Every family is different.

Instruct the students to draw pictures of their families engaged in a favorite activity. After the class completes the drawings, ask several students to show their drawings to the class and talk about the activity and any foods that might be associated with the activity.

Encourage the students to take their pictures home and share them with their families.

RESOURCES & MATERIALS

"Appendix C: A Pattern for Daily Food Choices"

Drawing paper
Crayons or markers

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, and printmaking and constructing three-dimensional forms.

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Examine food traditions.

ASSESSMENT CRITERIA

- Define the Mexican traditions surrounding the piñata.
- Discuss nutritious food alternatives to candy.
- Make a piñata filled with nutritious foods.

ACTIVITIES & STRATEGIES

Refer to the resource material, "Mexican Americans in Texas," to gain background knowledge for teaching this lesson.

Ask the students to describe a piñata.

> A piñata is a gaily-decorated paper maché figure, filled with toys or candy, and used especially for birthday parties or Christmas festivities. It is suspended so that blindfolded children may break it or knock it down with sticks, and then scramble for the contents.

Ask the following questions about the piñata:

- What culture does it come from?
- Have you ever seen one before?
- What was its shape?
- Have you ever played the piñata game?
- In what celebrations is the piñata used?

Ask the students to make a list of nutritious snacks that are low in sugar, fat, and salt which can be used in a piñata. Write the suggestions on the board.

- pretzels
- raisins
- banana chips
- dried fruit (apricots and apples)
- granola
- popcorn
- bite-size cereal pieces
- nuts
- edible seeds (sunflower and pumpkin seeds)

Let the students create a piñata and fill it with nutritious snack foods brought from their homes. As you fill the piñata, talk about nutritious snack foods. Individually wrap the foods that go into the piñata, and discuss reasons for wrapping them.

Play the piñata game. Line the floor with clean butcher paper if the snack foods are not wrapped.

RESOURCES & MATERIALS

"Mexican Americans in Texas" found at the beginning of the first grade *ESR IV* lesson plans

Materials for building the piñata:

- wallpaper paste or thinned white glue
- water
- container for paste
- strips of newspaper or tissue paper
- a large balloon
- waxed paper
- paints and brushes
- shellac, yarn, fabric, or other materials to decorate the piñata
- glue and/or stapler

Instructions for building the piñata:

1. Mix paste or glue into warm water until you have a thin, creamy paste.
2. Dip paper strips in the paste and apply them to a base such as a large balloon.
3. Cover the base with 2 or 3 layers of strips. Overlap the strips as you apply them.
4. Smooth the surface with your hand and wipe off any extra paste. Set it on waxed paper or hang overnight to dry.
5. Decorate your sculpture when it is completely dry.
6. Cut a hole in the top of the piñata to fill it with nutritious snack foods.

TEACHER TIP

Ask parent volunteers to bring nutritious snack foods that the students have suggested to place in the piñata.

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, constructing three-dimensional forms. Understanding and appreciation of self and others through art culture and heritage. The student shall be provided opportunities to look at and talk about contemporary and past artworks including primary sources and art visuals.

Fine Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

- Identify ways to feel good and healthy.
- Create a drawing of a healthy lifestyle habit.

ACTIVITIES & STRATEGIES

Lead the class in an exploration of good health by asking them the following questions. List responses on the board.

- What does *being healthy* mean?
  Answers: feeling and looking good; having energy, growing big and strong; not being sick.
- What can you do to stay healthy?
  Answers: exercise; brush teeth; eat healthy food; get enough sleep; wear seat belts

Tell the class that eating well is one of the most important things they can do to be healthy. Point out that being healthy means more than just not being sick; being healthy means being and feeling your best. *Best* is different for different people.

Relate to the students that even very healthy people get sick sometimes with colds, flu, stomach aches, measles, and other sicknesses, but that they usually get over these sicknesses quickly.

Instruct the students to use colored markers or crayons and paper to draw themselves doing something healthy.

When students have completed their drawings, ask them to describe the healthy things they are doing in their drawings.

Summarize by reminding students that they have drawn many things people can do to stay healthy, and they can do these things themselves to improve their own health to be and feel their best.

Adapted from:
"Changing the Course: Lower Elementary Curriculum,"
American Cancer Society, p.13-14

RESOURCES & MATERIALS

"Changing the Course: Lower Elementary Curriculum," American Cancer Society

Crayons or colored markers
Construction or drawing paper

TEACHER TIPS

- **Help the students identify natural limits. For example, that a man who is 5 feet 9 inches tall is unlikely to be a professional basketball player; that few women are built to be professional ballet dancers, or that physical handicaps limit some activities.**
- **The positive message is that we can all use our bodies and minds to be healthy in our own way.**

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, and constructing three-dimensional forms.

Health **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Recognize that the body needs nutritious foods to function effectively.
- Identify nutritious foods.

ACTIVITIES & STRATEGIES

Discuss the analogy of a car to a human body.

- If a poor grade of gasoline or fuel is used in a car, the car may sputter, cough, or die. When a good grade of gasoline is used, the car should run better. Our bodies are like cars because they need a good quality fuel (nutritious food) in order to maintain high levels of energy.
- A car uses water to cool the engine. If it does not have enough water, the car will overheat. The human must also have plenty of water in order to work its best.

Distribute the worksheet, "My Body: A Car." Instruct students to list some nutritious foods that will help their bodies work better.

Display the completed worksheets.

RESOURCES & MATERIALS

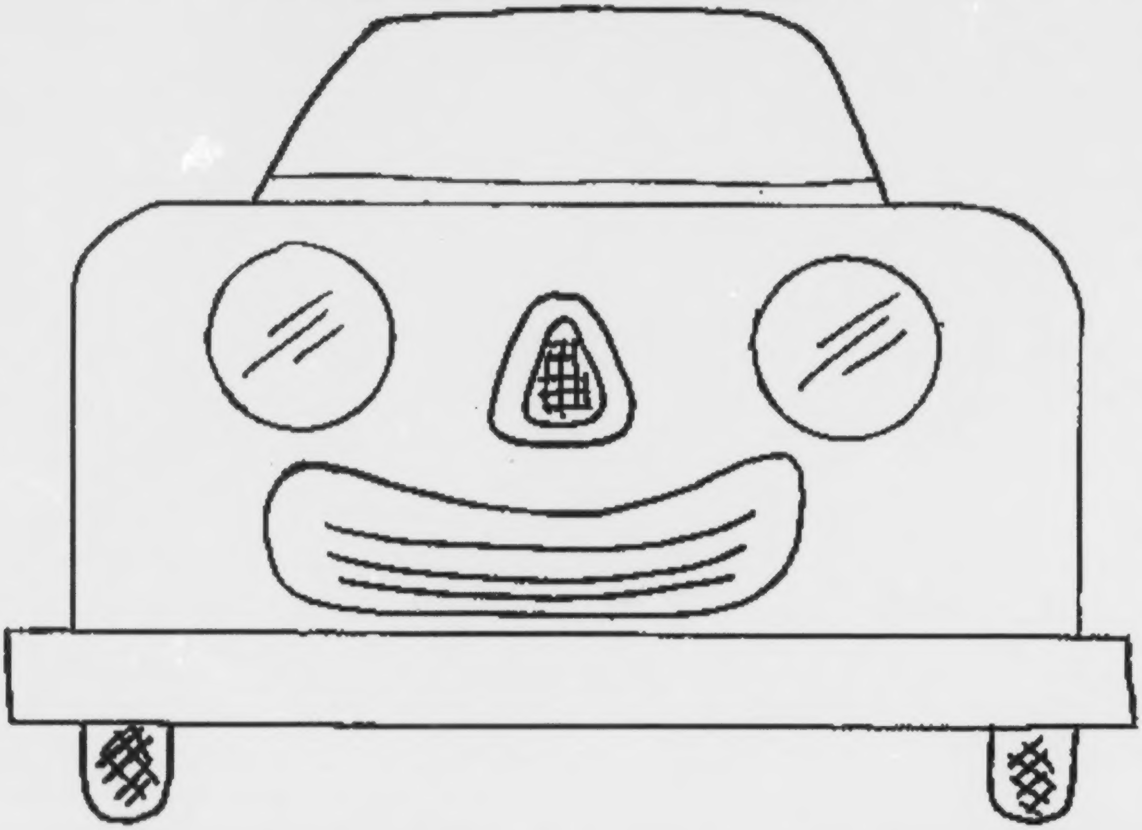
Worksheet: "My Body: A Car"

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

NAME ______________________ **DATE** ______________

My Body: A Car



My body is like a car because it needs good quality fuel. Here are some nutritious foods that will help my body work better.

Use the back of this page to create your own "My Body: A Car."

Health **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Increase awareness of personal snack food favorites and their contribution to a healthful diet.

ACTIVITIES & STRATEGIES

Explain that athletes strive for their personal best in sports, and students can strive for their personal best with nutrition.

Ask the students to list ten snack foods they usually eat.

Discuss each snack food by asking:
- What is a sugary snack food on your list?
- What is the name of a naturally sweet snack food on your list?
- What is a fatty snack food on your list?
- What is a salty snack food on your list?

Distribute and review the worksheet, "My Personal Best," with the students. Assist the students as they answer the four questions on the worksheet.

Help the students interpret their scores on the worksheet as follows:
- If the students totaled 14 - 16 points, then they are doing their "personal best" in nutrition.
- If the students totaled 11 - 13, then they are close to doing their "personal best" in nutrition.
- If the students totaled 8 - 10 points, then they are working towards reaching their "personal best."
- If the students totaled 5 - 7, then they need to work harder at reaching their "personal best."
- If the students totaled 0 - 4, then they need to start working at reaching their "personal best."

Discuss ways the students may improve their own snack food choices. Explain that some snack foods are better than others for good health.

RESOURCES & MATERIALS

Worksheet: "My Personal Best"

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

NAME ______________________ **DATE** ______________

My Personal Best!

Look at your list of snack foods and mark your answers to the following questions:

1. How many of your snack foods are fresh fruits?
   0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ List them.

2. How many of your snack foods are fresh vegetables?
   0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ List them.

3. How many of your snack foods are whole-grain breads, muffins, or cereals?
   0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ List them.

4. How many of your snack foods are low-fat milk, cheese, or yogurt?
   0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ List them.

5. Add the numbers next to each box that you marked.

   Write your score here. __________

6. Is your snack food diet your personal best?
   Yes ☐ No ☐ How can you improve your snack food choices?

ESR IV
TEXAS EDUCATION AGENCY

Health **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of breakfast.

ASSESSMENT CRITERIA

Recognize and describe feelings related to eating breakfast.

ACTIVITIES & STRATEGIES

Use the Teacher Resource pattern to construct Jumping Jiminy and Grumpy Gus puppets. Attach a craft stick to the side of each puppet head to manipulate the jumping or the tired actions. Use the puppets to teach the importance of eating breakfast.

Introduce Jumping Jiminy, who is energetic, excited, happy, wide awake, and strong because he ate a nutritious breakfast this morning! Discuss how a person feels at school during the morning when he or she eats breakfast.

Introduce Grumpy Gus, who is tired, unhappy, grouchy, and weak from hunger because he did not eat breakfast. Discuss how a person feels at school during the morning when he or she does not eat breakfast.

Ask the students to share with the class some favorite foods they like to eat for breakfast. Then ask students to list some foods they ate for breakfast this morning.

Conclude the lesson with the following group jingle:
Eating a nutritious breakfast makes me grow, gives me energy, and keeps me healthy.

RESOURCES & MATERIALS

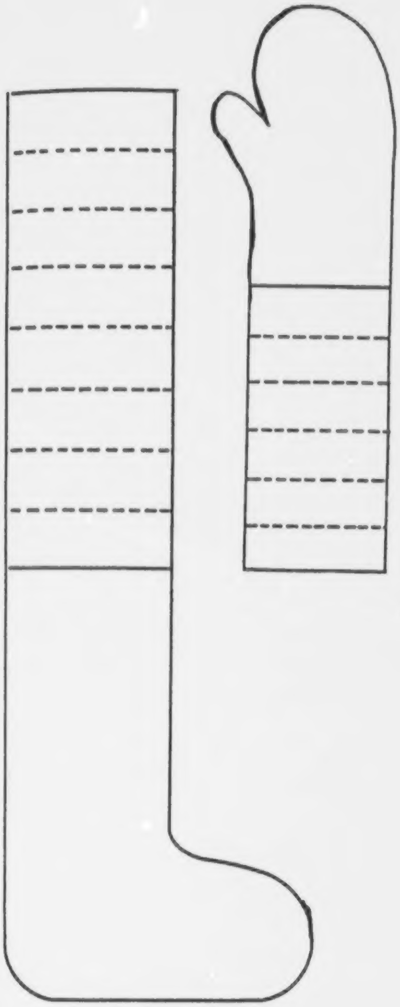
Teacher Resource: patterns for Jumping Jiminy and Grumpy Gus puppets

Scissors
Glue
Craft Sticks

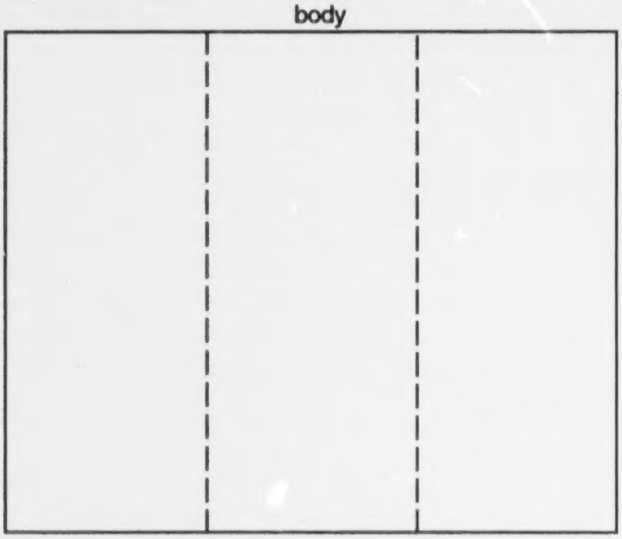
Remind the class that the School Breakfast Program is available to all students.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

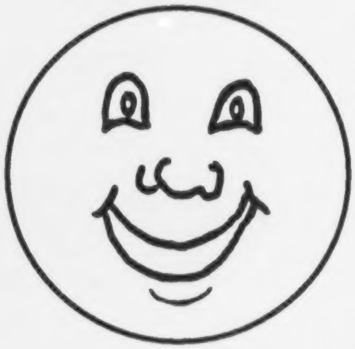


Cut two arms and two legs
for each puppet.

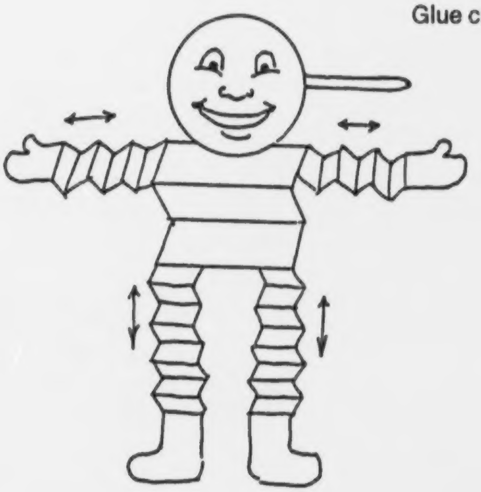


Cut one body
and
one head
for each puppet.

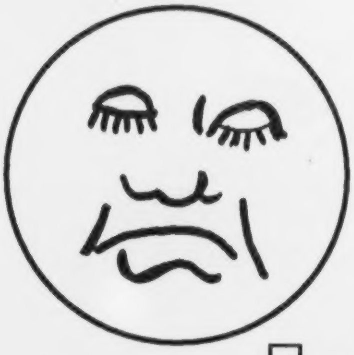
Jumping Jiminy



Glue craft stick to head.



Grumpy Gus



Language Arts Grade 1

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify foods in different forms using all five senses.

ASSESSMENT CRITERIA

Demonstrate an understanding of the different forms of food.

ACTIVITIES & STRATEGIES

Allow students to taste and see foods in different forms.
Examples:

APPLE
- fresh
- baked
- dried
- apple juice
- apple butter
- applesauce
- apple bread
- apple crisp

TOMATO
- fresh
- canned
- catsup
- sauce

CUCUMBER
- fresh
- relish
- pickle

Emphasize that although we may not like a food prepared in one form, we may like it prepared in some other form.

Distribute large sheets of drawing paper and the worksheet, "Andy Apple Grows Up." Read the worksheet to the students and encourage them to apply the knowledge from the lesson and incorporate it into their own stories.

RESOURCES & MATERIALS

Worksheet: "Andy Apple Grows Up"

Large sheets of drawing paper

In advance, ask the cafeteria manager to assist by bringing some of the foods from the list to the classroom.

ESSENTIAL ELEMENT

Language arts. Writing. Developing skills in writing effectively for a variety of purposes, modes, and audiences. The students shall be provided opportunities to write stories and brief descriptions.

NAME ______________________________ DATE ________________

Andy Apple Grows Up

Once there was a young apple named Andy. He knew that one day he would grow up. Did he want to be applesauce, apple juice, apple butter, or apple crisp? He could not decide!

On the sheet of paper your teacher gives you, draw a picture of Andy Apple and what he decided he wanted to be. Write a story below about why he made that decision.

LESSON OBJECTIVES

- Define the term *nutrients.*
- Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

- Identify eating practices that contribute to good health.
- Recognize the importance of physical and mental exercise.
- Plan a nutritious lunch.

Language Arts Grade 1

1

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Read the book, *Dinosaurs Alive and Well,* to the class. If the class period does not allow time to read the whole book, read the chapters, "Take Care of Yourself," "Eat Up," "Exercise Your Body," and "Exercise Your Mind."

Discuss the definition of the term *nutrients* with the class.

Review the terms *vitamins, protein, calcium, iron,* and *fiber.* Discuss these nutrients, their food sources, and what they do for you. Information on these terms can be found in the "Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV.*

Discuss the importance of physical and mental exercise.

Distribute white paper plates to the students. Instruct them to plan their lunch by drawing pictures of foods on the plate. Emphasize the guidelines stated in the book, *Dinosaurs Alive and Well.*

RESOURCES & MATERIALS

Dinosaurs Alive and Well: A Guide to Good Health by Laurie Krasny Brown and Marc Brown

"Instructors Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

White paper plates
Crayons and markers

The class could plan a menu and ask the cafeteria manager to include it in the school lunch menu.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to respond to storytelling by drawing or painting.

Language Arts Grade 1

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Explain the importance of breakfast.
- Explore new foods in each food group.

ASSESSMENT CRITERIA

Recognize that the body needs food for energy, growth, and health.

ACTIVITIES & STRATEGIES

Distribute the school breakfast menus and read the menus to the class. Explain that food gives them energy or fuel for growth.

Tell the students to sit in a circle for story time. Read the story, "The Breakfast Body Engine," then ask the following questions:
- Why do you think the car stopped?
- What do you feed a car engine to make it go?
- Did LaNelle and Eddie feed their body engines before they went to school?
- What makes your engine go?
- Do you need food every day? Why?
- Is one meal enough food for one day or one week?
- How do you feel when you do not eat breakfast?
- What kind of fuel did you eat for breakfast today?
- What are some healthy breakfast foods that give you energy?
- What is your favorite breakfast food?
- Do you know that breakfast is available at school?

Discuss some breakfast foods that are non-traditional (tacos, pizza, sandwiches, leftover casseroles).

Explain that the body needs nutritious foods for growth, energy, and health.

RESOURCES & MATERIALS

Teacher Resource: Story, "The Breakfast Body Engine"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

School breakfast menus

TEACHER TIP

The story could be read or acted out in a puppet show.

In advance, ask the cafeteria manager to provide breakfast menus.

ESSENTIAL ELEMENT

Language arts. Speaking. Developing fluency in using oral language to communicate effectively. The student shall be provided opportunities to communicate effectively in one-to-one and small group situations.

The Breakfast Body Engine

LaNelle and Eddie Jackson's father took them to the baseball game last night, and the trip there and back was so long that it made them very tired. Since they were so tired, they woke up late the next morning and did not have time to eat breakfast. Their dad took them to school, but the car suddenly stopped just a short distance from the school building.

Mr. Jackson got out of the car and lifted the hood to look inside the engine. Eddie said, "I think that big engine is what makes the car go." LaNelle said, "If it makes the car go, then why aren't we going?" Eddie said, "I don't know. Dad, why won't the engine go?" Mr. Jackson explained that the engine must be fed before the car can go. He also told Eddie and LaNelle that there are many different kinds of engines, but that they all can burn their fuel to make heat and energy. Energy is what makes everything go!

Mr. Jackson told Eddie and LaNelle that people have engines, too. Their engines are their bodies, and they have to be fed. He asked LaNelle if she knew what kind of fuel our body engines need. LaNelle said, "I think the body's fuel is food." Eddie said, "But Dad, how does the food make me move?"

Mr. Jackson said, "Your body burns food like a car burns fuel, only much slower and without flames. It may seem hard to believe, but food does burn in your body. Feel your cheek, or blow on your hand. It's warm. The heat comes from inside your body where the food you eat burns and makes heat."

Mr. Jackson replied, "Well, Son, the problem with the car right now is that the fuel supply is gone because we used most of the fuel for the trip to the ball game last night. You see, a car can hold only enough fuel for a short distance. Your body is the same way. If it does not get enough fuel, it will eventually stop running. You need to supply your body with food for breakfast, lunch, and dinner every day."

Eddie was glad he understood why he needed to eat every day. He decided that he would get up early and eat breakfast the next morning.

LaNelle looked at her watch and said, "Gee, Dad, we're going to be late for school. Is there any way to get the car started?" Eddie said, "Look, Dad, there's a gas station right down the street." While Mr. Jackson filled the car with fuel, he bought milk and muffins for Eddie and LaNelle to eat on the ride to school.

Did you have your breakfast fuel
for your body engine this morning?

LESSON OBJECTIVE

Explore new foods in each food group.

ASSESSMENT CRITERIA

Recognize that healthy eating habits can be gained in small increments.

ACTIVITIES & STRATEGIES

Prior to this activity, prepare a tray with two or three uncommon foods such as starfruit, jicama, or Gouda cheese which have been cut into sample sizes. Prepare enough samples for each student to try each food item.

Lead a discussion about the foods students like by asking the following or similar questions:
- What foods do you like?
- Are there some foods you have not tried?
- Why have you not tried them?

Read the book, *Gregory, the Terrible Eater*, to the class. Discuss the book by asking the following questions:
- How did Gregory learn to eat the healthy foods that would help him grow?
- What are some foods that you thought you would not like, but did like after you tried them?

Show the students a tray of assorted foods.

Tell students to wash their hands before sampling the foods.

Distribute one of each of the types of foods to each student, identifying the food item and the type of food such as fruit, vegetable, or dairy.

After the students have tasted the foods, ask the ones who liked certain foods to raise their hands. Allow students to take turns describing what they liked about the foods.

RESOURCES & MATERIALS

Gregory, the Terrible Eater by Mitchell Sharmat

"Heart Explorers," American Heart Association Schoolsite Program, Grade 1

Moist towelettes
Napkins

TEACHER TIPS

- **Tell students to wipe hands with moist towelettes before and after touching foods.**
- **Remind students that it is important to wash foods before eating.**
- **Do not use foods that were touched for tasting.**

In advance, ask the cafeteria manager to prepare a tray with a variety of uncommon foods.

ESSENTIAL ELEMENT

Language arts. Reading. Using comprehension skills to gain meaning from whatever is read. The student shall be provided opportunities to recall facts and details.

Language Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Determine the results of unhealthy food habits.

ASSESSMENT CRITERIA

- Discuss the importance of a clean cafeteria.
- Demonstrate proper handwashing.

ACTIVITIES & STRATEGIES

Introduce the cafeteria manager to the students.
- Inform the class that the manager is going to discuss healthy and unhealthy food handling.
- Encourage the students to ask questions after the manager has finished speaking.

Distribute the worksheet, "Clean Hands." Tell the students to number the pictures in the proper sequence for washing hands.

Demonstrate the four steps in proper handwashing:
1. Wet the hands thoroughly.
2. Lather the hands with soap front and back, between fingers and under fingernails.
3. Rinse the hands with clean water.
4. Dry the hands with a clean towel or a wall-mounted blow dryer.

Tell students to practice proper handwashing during their next visit to the restroom.

Ask students to take the worksheet home and share it with their families.

RESOURCES & MATERIALS

Worksheet: "Clean Hands"

In advance, ask the cafeteria manager to allow students to tour the cafeteria to see sanitation practices.

In advance, invite the school cafeteria manager to discuss with the class sanitation in food handling.

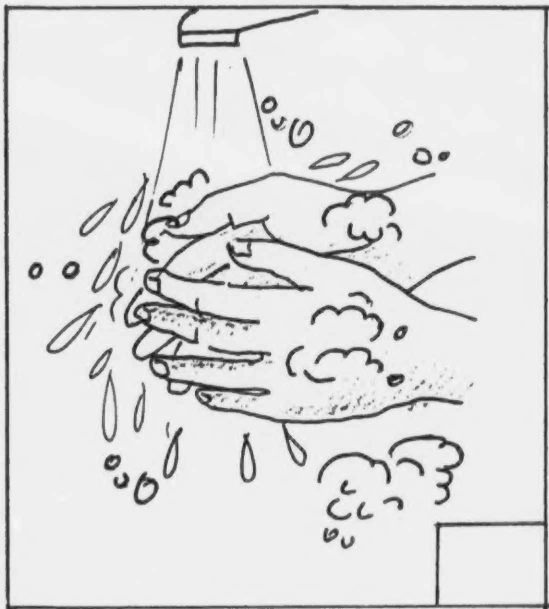
Ask the manager to stress:
- **reasons for having clean hands**
- **proper handwashing procedures**
- **reasons the cafeteria workers wear hats, hair nets, and plastic gloves**
- **the importance of washing dishes in hot, soapy water**
- **that the cafeteria employee also operates dishwashing machines**

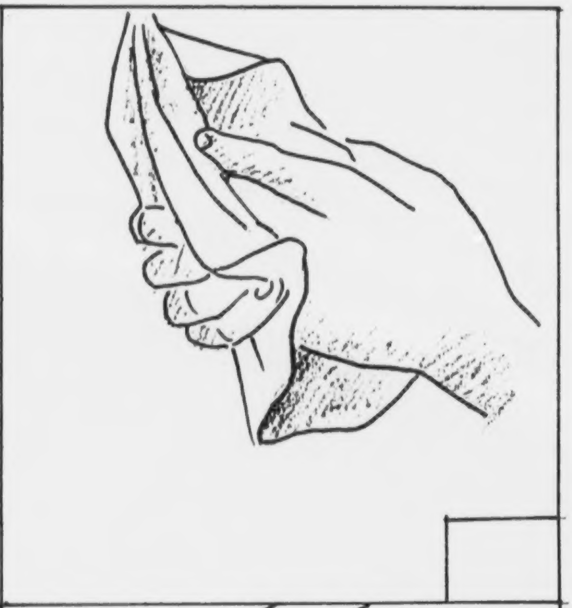
ESSENTIAL ELEMENT

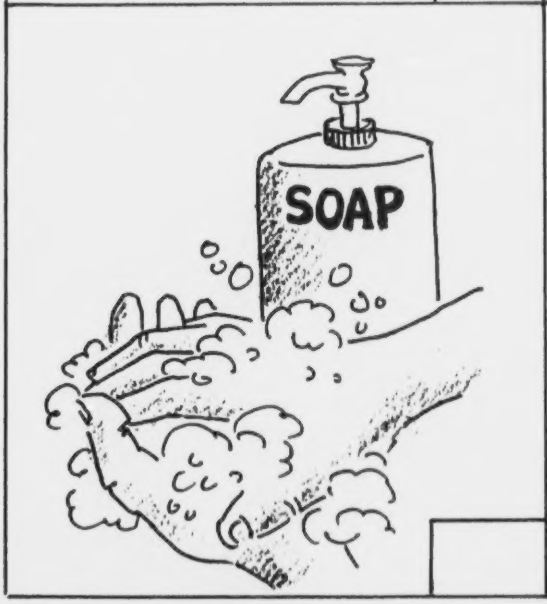
Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to identify the main idea of a speaker's message.

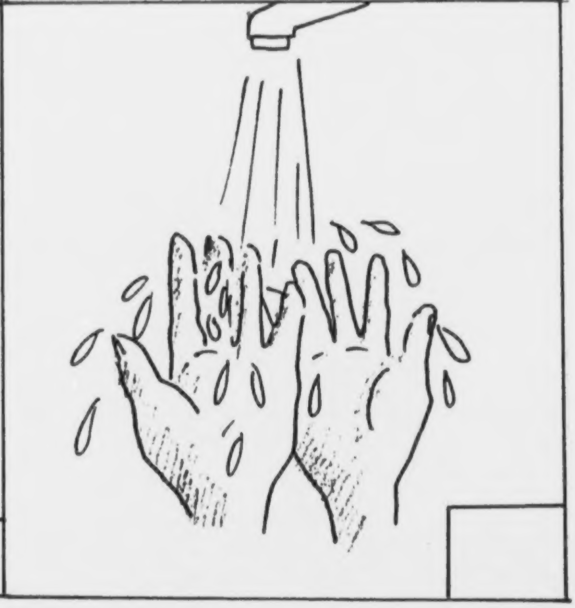
NAME ______________________________ DATE ______________

Clean Hands









Language Arts **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Recognize ways to build healthful exercise and movement into each day.

ACTIVITIES & STRATEGIES

Instruct the students to name their favorite physical activities. Explain that exercise is important, and it needs to be combined with a nutritious diet in order to be healthy.

Discuss the following benefits of physical activity. Physical activity helps:
- maintain desirable weight
- strengthen bones
- you sleep well
- you feel energetic
- you feel good about yourself
- prevent heart disease

Explain that in addition to games and sports activities, daily physical movement such as raking leaves, washing the car, and sweeping the garage is important in keeping physically fit.

Ask the students to contribute ideas for ways to fit exercise and movement into each day. Suggested movements and exercises include: walking, skipping, hopping, bike riding, mopping, sweeping, roller skating, ice skating, jumping rope, carrying out trash, moving furniture, clearing the table, dancing, walking up stairs, reaching, planting a garden, playing baseball, playing football, playing soccer, playing tennis, and playing basketball.

Distribute the worksheet, "My Plan for Seven Active Days." Ask the students to work with a partner to complete the worksheet, and then share their plan for one active day with the class.

Ask students to collect and bring pictures of physical activity and movement to class.

Conclude that good nutrition and physical fitness will help students achieve and maintain good health.

Post the worksheets in the classroom so that students can see what others wrote. Over the next week, tell students to check the day that they actually performed the listed activity.

RESOURCES & MATERIALS

Worksheet: "My Plan for Seven Active Days"

ESSENTIAL ELEMENT

Language arts. Writing. Using a variety of techniques to select topics and to generate material to write about those topics. The students shall be provided opportunities to use information and ideas from personal experience as a source of writing.

NAME ______________________________ DATE ________________

My Plan for Seven Active Days

Write the name of at least one way to fit exercise and movement into each day.

Monday

____

Tuesday

____

Wednesday

____

Thursday

____

Friday

____

Saturday

____

Sunday

____

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Identify nutritious drinks that are healthy snack foods.

ACTIVITIES & STRATEGIES

Discuss the importance of making healthy snack food choices. Explain that eating sweet foods at snack time may make students feel tired and unable to do well in school. High-sugar snack foods can also contribute to tooth decay.

Ask the students to guess the number of teaspoons of sugar in one 12 oz. can of soft drink. Measure about ten teaspoons of sugar in the glass as the students count the spoonfuls aloud.

Explain that food is one of the body's basic needs. When the body does not get the nutrition it needs, it slows down, and the person feels tired and has difficulty concentrating on school work. Fruit juices are healthy snack food choices.

Use the Teacher Resource, "Naturally Good Drinks," to talk about different kinds of healthy drinks for snack time. Show magazine pictures of healthy drinks during this discussion.

Show the class how to make Grapple Punch, then serve some punch to each student.

Play the game, "Name That Naturally Good Drink." Give an example, then call out a juice combination, and ask a student to suggest an unusual and interesting new name for the drink.

RESOURCES & MATERIALS

Teacher Resource: "Naturally Good Drinks"

"The Heart Treasure Chest," American Heart Association Schoolsite Program, Young Children

Magazine pictures of water, orange juice, milk, apple juice, grape juice, and tomato juice
Glass
Spoon
12 oz. soft drink
Pitcher
Cups
Sugar
Grapple Punch recipe
Apple juice
Grape juice
Ice

In advance, ask the cafeteria manager to provide some of these juices and request that the Grapple Punch be included in a school breakfast menu.

ESSENTIAL ELEMENT

Mathematics. Number and numeration concepts. Concepts and skills associated with the understanding of numbers and the place-value system. The student shall be provided opportunities to orally count objects by ones, twos, fives, and tens through the highest number conceptualized.

NATURALLY GOOD DRINKS

- Water is a healthy beverage that is sometimes forgotten. It is important to drink water every day.
- Orange juice is one of the best drinks because it is nutritious and naturally sweet. Be sure to drink real orange juice and not the orange drinks that have sugar added.
- Milk is a delicious beverage that is not just for babies. Milk gives us calcium and vitamins A and D for strong bones and teeth.
- Apple juice is another delicious and healthy beverage, and it is naturally sweet.
- Most bottled grape juice does not have added sugar, but the frozen concentrate may have added sugar. Either way, it is still more nutritious than a soft drink!
- Tomato and vegetable juices are nutritious, delicious, and a nice change of pace from sweet beverages.

Naturally Good Grapple Punch

1. *Mix equal amounts of grape juice and apple juice.*
2. *Add ice and serve.*

This is delicious with red or white grape juice as well as purple grape juice.

NAME THAT NATURALLY GOOD DRINK

Directions:
Call out a juice combination and ask students to suggest an unusual and interesting new name for the drink.

Cranberry and Orange

Lemon and Orange

Apple and Cranberry

Cherry and Pear

Apple and Cherry

Cherry and Grape

Lime and Lemon

Science **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Identify a substance as sugar.
- Name foods that are high in sugar.
- Explain the dangers of a high-sugar diet.

ACTIVITIES & STRATEGIES

Explain the term *carbohydrates*. ***Carbohydrates*** are nutrients that supply energy for body functions. Simple carbohydrates are called sugars.

Pour one-fourth of a pound of sugar into a glass and explain that the average American eats that much sugar every day. Allow students to name some foods that have a high sugar content.

Much of the sugar is hidden in the foods we eat. Show students 10-12 teaspoons of sugar in a plastic bag and explain that it is the amount of sugar in a cola. Discuss hidden sugar in foods.

Stress the importance of limiting sugar intake. Sugar needs to be limited in the diet of people who have health problems such as obesity, diabetes, and heart disease. Sugar can also contribute to tooth decay.

Allow students to name ways they can reduce sugars in their diets. (Refer to the "Instructors Resource Guide for Teaching Nutrition Education" for more information on sugar.)

Growing sugar crystals is an activity to help students learn more about sugar.

1. Add one cup of hot water to one and three-fourths cups of sugar.
2. Heat it in a pan and stir until the sugar is completely dissolved.
3. When the solution has cooled a little, pour it into a drinking glass or jar.
4. Tie pieces of clean string to the center of a pencil. Place the pencil over the mouth of the glass or jar to let the string hang in the solution. Attach washers as weights to the end of the strings.
5. Within a few hours, sugar crystals will begin to grow onto the strings.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

"Heart Explorers," American Heart Association Schoolsite Program, Grade 1

One pound of granulated sugar
Water
Hot plate
Pan
Drinking glass
String
Washers
Pencil

ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to observe similarities and differences in objects, organisms, and events.

LESSON OBJECTIVES

- Identify food as the source of nutrients needed for growth, energy, and health.
- Make wise food choices at snack time.

ASSESSMENT CRITERIA

- Identify many different vegetables.
- Recognize that vegetables make a nutritious snack food.

Science **Grade 1**

1

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Write the word, vegetable, on the board. Ask students to name some vegetables, and list their suggestions on the board. Attach a picture of each vegetable next to their suggestion.

Ask the students to describe their favorite vegetable (shape, taste, how it is prepared or eaten).

Show students how to divide a sheet of paper into four or more squares. Tell them to draw a different vegetable in each square, color it, and write the name of the vegetable under each drawing.

Explain that a ***vegetable*** is a plant that contains minerals, vitamins, fiber, and other nutrients to help people grow and be healthy. Vegetables help supply the energy we need to run and play. Some examples of vegetables include broccoli, cauliflower, carrots, celery, cucumbers, and green peppers. Name some vegetables that the students did not list earlier.

Vegetables make an excellent snack food. Serve some raw vegetables (carrot sticks, zucchini slices, and broccoli spears) for the students to eat with low-fat dip.

Perform the following activity with students:
- Plant a number of different vegetable seeds in an aquarium.
- Plant them next to the glass so that the students can watch the seeds germinate and grow down into the soil.
- Allow the students to observe the seeds daily and discuss what they see.

Option: Each student could plant seeds in a clear plastic cup, and watch their own vegetable grow.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition" found in the introductory section of *ESR IV*

"Changing the Course: Lower Elementary," American Cancer Society

"Fruits and Vegetables Superstars Poster," and "Cancer—Reduce Your Risk Poster," American Cancer Society

Variety of vegetable seeds
Aquarium
Clear plastic cups
Potting soil
Pictures of vegetables
Raw vegetable sticks

Cottage Cheese Dip

Tools:
- measuring cup
- medium mixing bowl
- measuring spoons
- blender or food processor
- aluminum foil

Ingredients:
- 1 12-oz. carton low-fat (1 %) cottage cheese
- 1/2 cup plain nonfat or low-fat yogurt
- 1 1/2 teaspoons chopped fresh dill or
- 1/2 teaspoon dried dill
- 1/2 teaspoon onion powder
- 1/4 teaspoon garlic powder
- 1/8 teaspoon black pepper

Blend all ingredients together until product is a creamy consistency.

ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to observe properties of objects, organisms, and events.

LESSON OBJECTIVE

Name the sources of food.

ASSESSMENT CRITERIA

- State that foods come from plants and animals.
- Categorize the source of foods.

Science **Grade 1**

1

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Discuss the sources of different foods by asking the following questions:
- Does corn come from a plant or an animal?
- Does steak come from a plant or an animal?
- Where do apples come from?
- Where does bacon come from?

Show some of the pictures that represent these questions. Ask students to name some more examples. Show some pictures of different foods, and let the students guess the source (plant or animal) of these foods.

Designate one side of the room for plants and post a plant picture. Designate the other side of the room for animals and post an animal picture. Bring some of the students to the front of the room.

Give each student a picture of a food. Tell them to move to the side of the room that corresponds to the food source of the picture. Ask the class to determine the correct source of food.

Divide the class into small groups of three to four students. Give one of the following pictures to each group:
- french fries
- loaf of bread
- can of corn
- frankfurter

Instruct each group to discuss the source of their assigned food and describe how the source had to change to make it look like the pictured food.

Tell each group to share their conclusion with the class.

RESOURCES & MATERIALS

Pictures of foods from magazines, or a set of the cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, Illinois, 60018-4233
(708) 696-1860, Ext. 220

A picture of a plant such as a corn plant or an apple tree
A picture of an animal such as a cow, a pig, or a chicken

Vegetable soup
Eggs
Macaroni
Ice cream
Cereal
Yogurt
Grapes
Popcorn
Orange juice
French fries
Loaf of bread
Can of corn
Frankfurter

ESSENTIAL ELEMENT

Science. Draw logical inferences, predict outcomes, and form generalized statements. The student shall be provided opportunities to draw conclusions from observed data.

Science **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Name the sources of food.

ASSESSMENT CRITERIA

- State that foods come from plants and animals.
- Categorize the source of foods.

ACTIVITIES & STRATEGIES

Discuss the sources of food. Name different foods and ask the students to identify the source (plant or animal).

Explain that food usually comes from two sources, plants or animals:
- Fruits, vegetables and grain products come from plants. Plants have many edible parts, including seeds, roots, stems, flowers, and leaves.
- Animals provide meat, milk, and eggs.

Write the school lunch menu for the day on the board. Ask the students to classify each food listed on the lunch menu as to plant or animal source.

Distribute the worksheet, "Plant or Animal?" and read the instructions to the students. After completion, review and discuss the answers with the class.

RESOURCES & MATERIALS

Worksheet: "Plant or Animal?"

"Appendix C: A Pattern For Daily Food Choices"

"Project TEACH," Texas Department of Agriculture

Lunch menu for the day

- **In advance, invite the cafeteria manager to come to class and review the school lunch menu for the day or the week and help students classify each food.**
- **Use Appendix C to classify foods from the five food groups as to plant or animal source.**

ESSENTIAL ELEMENT

Science. Communicate data and information in appropriate oral and written form. The student shall be provided opportunities to describe objects, organisms, and events from the environment.

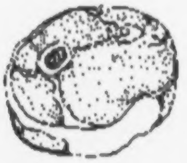
NAME ______________________________ DATE ______________

Plant or Animal?

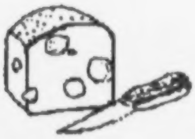
DIRECTIONS:
In front of each of the following, write ***A*** if it comes from an animal and ***P*** if it comes from a plant.

1. ____ banana

2. ____ steak

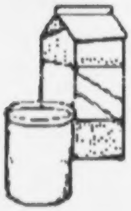


3. ____ cheese

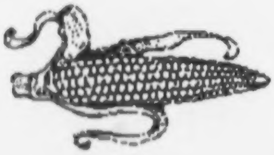


4. ____ bread

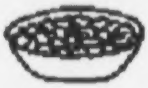
5. ____ milk



6. ____ corn



7. ____ cereal



8. ____ grapes

9. ____ celery

10. ____ apple

11. ____ chicken leg

12. ____ eggs

13. ____ broccoli

14. ____ peanuts

15. ____ carrot

16. ____ bacon

Science **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

- Explain the importance of selecting nutritious snacks.
- Create a nutritious snack.

ACTIVITIES & STRATEGIES

Encourage students to eat a variety of nutritious foods at mealtime and snack time in order to meet their daily nutritional needs for growth and development. Students can learn to choose healthy foods.

Instruct students to make a list of all the snack foods that they eat. Identify and discuss the snack foods that are healthy and the ones that are not healthy.

Help the students make another list of nutritious snack foods.

Fruit makes a nutritious snack. (Refer to the "Instructor's Resource Guide for Teaching Nutrition Education" for more information on nutritious snacks.) Ask students to name some fruits.

Ask students if they know how raisins are made. Tell them that you will make some together.

1. Select a fresh bunch of seedless grapes.
2. Pull the grapes off the stems and wash them thoroughly.
3. Place overnight in a toaster oven at low temperature.
4. Check the grapes every day to observe their progress.

When the raisins are *done*, allow the students to taste the raisins. Ask them whether these taste better than the packaged raisins that are bought in a grocery store?

Distribute one homemade raisin and one store-bought raisin to each student. Tell them to compare raisins, by observing, touching, and tasting both kinds of raisins. Discuss the differences.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

Toaster oven
Napkins
Seedless grapes
Box of raisins

TEACHER TIP

Tell the students to wash their hands with soap and water before making the raisins.

ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to observe properties of objects, organisms and events in the environment.

Social Studies **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Investigate the customs of Mexican-American cultures.

ASSESSMENT CRITERIA

Recognize ways that cultural background may affect food selections.

ACTIVITIES & STRATEGIES

Use the "Mexican Americans in Texas" information found in the introductory section of *ESR IV* to explain the history, social life, and food of the Mexican Texans. Emphasize that:
- All people have the same basic food needs.
- Cultural background may affect food selection.
- Most cultures have foods that can be classified into food groups. Use "Appendix C: A Pattern for Daily Food Choices," and ask students to classify common foods of the Mexican-American culture into food groups.

Examples of food groups of Mexican-American foods:
- Vegetables: peppers and onions
- Fruits: tomatoes, bananas, avocados, and melons
- Breads, Cereals, Rice, Pasta: rice, corn and flour tortillas
- Milk, Yogurt, Cheese: cheese and milk
- Meat, Poultry, Fish, Dry Beans and Peas, Eggs, Nuts, and Seeds: beans, beef, pork, chicken, and eggs.

Review and discuss the information in the "Mexican Americans in Texas" section about the historical Cinco de Mayo holiday.

Tell the students to wash their hands with soap and water. Assist the students as they prepare quesadillas. Explain that the ingredients used in the quesadillas are nutritious foods that will help provide energy and good health.

Instruct each student to cover one-half of a small flour tortilla with cheese, mashed beans, and taco sauce, then fold the tortilla over. Heat both sides of the tortilla in a lightly oiled skillet until the cheese melts. Cool and serve to the students.

When the quesadillas are served, listen to some Mexican-American music, and/or ask if any students have attended a real Cinco de Mayo celebration and talk about the activities.

RESOURCES & MATERIALS

"Appendix C: A Pattern for Daily Food Choices"

"Mexican Americans in Texas" found in the introductory section of *ESR IV*

Mexican folklorico music
Electric skillet
Spray cooking oil
Napkins
Knife
Small flour tortillas
Low-fat cheese
Mashed beans
Taco sauce

Plan a Cinco de Mayo menu. In advance, check with the cafeteria manager about including it in the school lunch menu.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The students shall be provided opportunities to describe similarities and differences among people.

LESSON OBJECTIVES

- Investigate the customs of Mexican-American cultures.
- Explore food from different cultures.

ASSESSMENT CRITERIA

Identify the Mexican influence on food customs in Texas.

Social Studies **Grade 1**

1

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain the word *custom:* A practice or way of doing things that has been handed down from one generation to the next. Everyone has to eat to stay alive, but table manners and ways of preparing foods vary among cultural groups. Examples of customs include: the holidays we celebrate, the activities we do during those holidays, and the foods we eat during the holidays.

Ask the students to name foods they eat and activities they do on certain holidays. Ask the students to point out the differences and similarities in responses.

Locate Mexico on a map and explain to the class that they will learn about Mexico and some of its influences on food customs in Texas.

Present the information on Mexican food in the opposite column, and ask the students to name some of the Mexican foods that are served in the School Lunch Program. Encourage the students to name their favorite Mexican food(s).

Have a taco tasting party. Using an electric skillet, prepare taco meat according to the directions on a package of taco seasoning mix. As the meat is simmering, read the spices listed on the package ingredient list. Emphasize those spices that are common to Mexican cooking. Drain the fat. Mention that the meat should be rinsed.

Place taco toppings in separate bowls on the table. Ask the students to identify the food group for each of the toppings. For example, lettuce, tomatoes, and onions are from the vegetable food group.

Fill taco shells with meat sauce. Serve on a platter. Let the students select their own toppings.

Eat and enjoy!

RESOURCES & MATERIALS

Taco ingredients:
2 pounds lean ground beef
2 packages taco seasoning
1 box mini taco shells
1/2 head lettuce, shredded
1/2 pound grated low-fat cheese
1 medium onion, chopped
2 medium tomatoes, chopped
1 8-ounce can taco sauce
electric skillet
1 large mixing spoon
5 bowls, paper plates, napkins
1 large or several small serving platters

Information on Mexican food:

Many of our customs were brought by the immigrants from other countries. In Texas, the people from Mexico have had the most significant influence on the foods we eat.

Mexican food was made with simple equipment and with foods found in the area. Texas Mexican foods are different from authentic Mexican foods. The most commonly-used foods among Mexican Texans include beans, beef, bread, chicken, chocolate, cheese, eggs, sugar, and tortillas. The spices include cilantro, coriander, cumin, garlic, onions, and various types of peppers.

TEACHER TIP

- **Ideas to enhance the lesson: Display costumes or pictures of people dressed in traditional Mexican costumes, Mexican music, a video on Mexico.**
- **For additional information on the Mexican culture, refer to the cultural awareness information at the beginning of this section.**

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe similarities and differences among people.

Social Studies **Grade 1**

1

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Develop an appreciation for foods from different cultural groups.

ASSESSMENT CRITERIA

- Match common American foods with their country of origin.
- Classify foods into food groups.

ACTIVITIES & STRATEGIES

Distribute the worksheet, "Foods From Around the World." Explain that:
- The worksheet lists some of the foods that make up our American menu.
- People were eating most of these foods before America was discovered.
- Many of these foods were brought here by Europeans and Africans.

Review the list of foods with the students and instruct them to place a check in the apple next to the foods that they like to eat.

Then read the name of the country or continent next to each food, and ask individual students to find it on the map or the globe.

Extension:
- Review the school lunch menu and identify the country of origin of each food item.

- Using agriculture maps, discuss how many foods are grown in Texas and where they are grown.

RESOURCES & MATERIALS

Worksheet: "Foods From Around the World"

"Project TEACH," Texas Department of Agriculture

Map or globe
School lunch menu

TEACHER TIP

The Agricultural Stabilization and Conservation Services Office may be able to provide an aerial view of the crops in your country.

ESSENTIAL ELEMENT

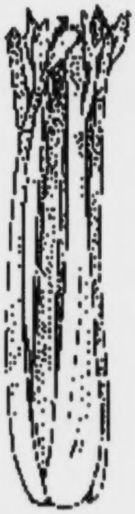
Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe similarities and differences among people.

NAME ______________________________ **DATE** ______________

FOODS FROM AROUND THE WORLD

Put a check in the apple next to the foods that you like to eat. Listen as your teacher reads the name of the country or the continent that each food came from.

- ☐ Apple - Russia
- ☐ Asparagus - Italy
- ☐ Banana - Far East, Malaysia
- ☐ Beans - Africa, Asia, Americas
- ☐ Butter - India, Asia Minor
- ☐ Cheese - East Indies
- ☐ Chili Peppers - Americas
- ☐ Beef - Europe
- ☐ Beets - Mediterranean and Atlantic Coasts of Europe
- ☐ Cabbage - Mediterranean region
- ☐ Cantaloupe - Asia, Africa
- ☐ Carrots - Middle East
- ☐ Celery - Americas, Africa, Asia, Europe
- ☐ Chicken - India
- ☐ Chocolate - Americas
- ☐ Egg - India
- ☐ Eggplant - India
- ☐ Grapefruit - West Indies
- ☐ Grapes - Mediterranean region
- ☐ Lamb - Europe, Middle Asia
- ☐ Lettuce - Europe, Asia
- ☐ Macaroni - Italy, North Africa
- ☐ Okra - Africa
- ☐ Onions - West Asia, Africa
- ☐ Orange - Southeast Asia



Education
for
Self-Responsibility IV:

NUTRITION
EDUCATION

GRADE
2

ESR IV

TEXAS EDUCATION AGENCY

African Americans in Texas

Grade Two

The African American population of Texas today comprises approximately 14 percent of the state's population. Approximately thirty million blacks live in the United States and account for 12 percent of the nation's total population. The term African American refers to a group of persons having origins in any of the black racial groups of Africa. The individuals who make up the African-American ethnic group come from three basic historical backgrounds which include the following:

1. free persons (not slaves)
2. emancipated slaves and their descendents
3. immigrants from the West Indies

The ancestors of most African Americans came from the Western Sudan area of Africa.

The African-American history in Texas is different from that of other cultural groups in that their immigration typically occurred as a result of slavery. Some African Americans and many white Europeans were first brought to the United States as indentured servants who agreed to be servants for a fixed number of years. However, many were slaves who were bought and sold and became their master's property for life.

Slaves acquired through trade or conquest, as well as free Africans, often accompanied many of the first European explorers and served as craftsmen, merchants, navigators, and soldiers. They were involved in the establishment of a Spanish colony in St. Augustine, Florida, in 1565 and arrived in the English colonies in 1619 on a Dutch ship that landed at Jamestown, Virginia. Africans were also with the Spanish in the first explorations of New Spain and were in the vanguard (that part of the army which goes ahead of the main body) of the Spanish army.

In the late 1700s, blacks comprised 25 to 30 percent of the Spanish Texas population. Due to the Spanish environment, Africans were referred to as Negroes which is the Spanish term for black. Since few Spaniards were slaveholders, many blacks were socially accepted and worked in skilled trades or professions of their choice as carpenters, domestic workers, farmers, blacksmiths, landholders, miners, shoemakers, teachers, merchants, and wagoners. Interracial marriages were not uncommon; however, blacks were not allowed to hold government positions.

During the time that Texas was under Spanish control, free blacks settled in the San Antonio area and in East Texas. In the early 1800s, Texas was opened to immigration and many settlers from the United States brought slaves who helped develop the land in East Texas, as well as around the Brazos and Trinity rivers. After the Civil War and emancipation, many African Americans settled in Central Texas; however, the largest percentage of African Americans in Texas remain in East Texas.

The war for Texas independence began in 1835, and there was a great need for volunteers in the Texas army. African Americans, Anglo Americans, and Mexican Americans responded and fought together with Mexican Texans against Santa Anna and his troops. Famous blacks who fought in the Texas army included Hendrick Arnold, Greenbury Logan, Samuel McCullough, Jr., and Joe Travis.

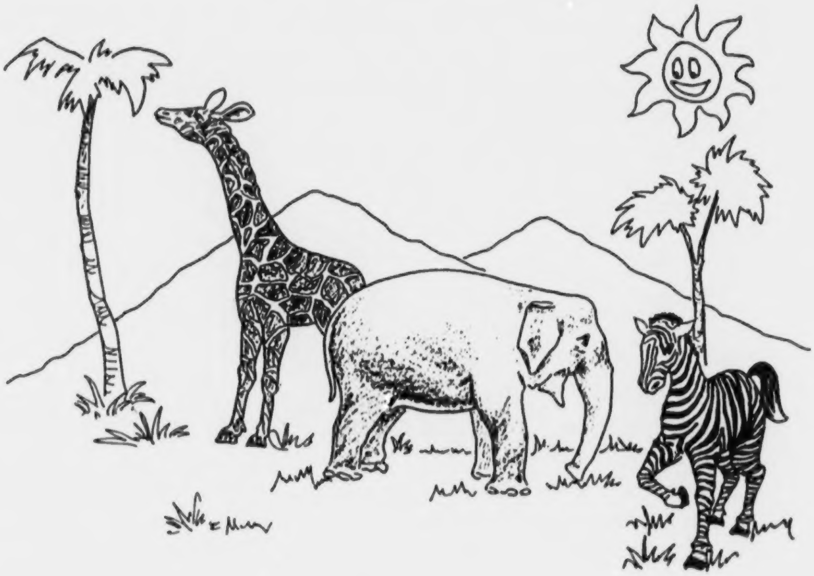
Hendrick Arnold played an important role in the Texas Revolution. He was a scout for the Texan Army, but posed as a runaway slave and infiltrated Mexican camps. Arnold briefed William Travis at the Alamo and delivered information to Sam Houston that proved instrumental in winning the Battle of San Jacinto.

Another famous African American, William Goynes, moved to Texas in the late 1820s and settled near Nacogdoches. Goynes became wealthy through his blacksmith shop and acquired land, owned a boarding house, raised cattle, ran a wagon train to Dallas, and was a horse trader. He served as an envoy for Sam Houston during the war for Texas' independence.

In September of 1863, the Emancipation Proclamation was issued by President Lincoln stating that all slaves were to be free people effective January 1863. The news did not reach Texas until several months after the war ended in April of 1865. General Gordon Granger read the Emancipation Proclamation in Galveston on June 19, 1865. African-American Texans celebrate this date as ***Juneteenth*** with festivities that include parades, music, dancing, speeches, and picnics.

After emancipation, many African Americans continued their occupations as cooks in Southern homes. However, when cooking for themselves, they often ate the inexpensive parts of animals such as chitterlings (the small intestines of pigs), pigs' feet, hog jowl, and organ meats. Inexpensive and readily available foods such as potatoes, sweet potatoes, breads, black-eyed peas, wild greens, hominy grits, rabbit, and squirrel were common ingredients in their meals. It is important to note that these foods were significant to slaves and emancipated

slaves, but may not be familiar to African Americans today. Slaves and emancipated slaves played a key role in farming and ranching, and the foods they ate were the results of their creativity to make the best of their limited resources.



Fine Arts **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Identify food as the source of nutrients needed for growth, energy, and health.
- Discuss nutritional needs of seven and eight year olds.

ASSESSMENT CRITERIA

- Identify the relationship of food to the growth and health of all living things.
- Discuss the basic functions of food.

ACTIVITIES & STRATEGIES

Discuss that all living things have special needs in order to grow and be healthy. Ask the students the following questions:
- Do they have any pets?
- What do pets need to be healthy?
- Do they have any house plants?
- What do plants need to be healthy?

Explain that everyone needs food to stay healthy.
- If plants or animals are in the classroom, relate the discussion to the food needs of plants and animals.
- Relate conclusions of the growth needs of all plants and animals to people.
- The basic functions of food are:
  - Growth. Food provides the building blocks our body needs to make new cells.
  - Energy. Food provides the fuel our body needs to function.
  - Repair. Our bodies need to replace worn-out cells with new ones all the time.

Tell students that they will identify the basic food groups and the foods that belong to them. Lead them in a treasure hunt.
1. Divide the class into five teams.
2. Tell each team to decorate a shoe box to represent a treasure chest.
3. Label each box vegetables, fruits, breads, milk, or meat.
4. Instruct students to cut several pictures of foods from magazines and paste them on construction paper. These pictures of foods will be the hidden treasures.
5. Hide the pictures throughout the room while students put their heads down on their desks to cover their eyes.
6. The students must find and collect the hidden food pictures and then return to their seats as a team with their pictures.
7. The students, as a team, will place their pictures in the appropriate treasure chest, counting one point for each picture.
8. The team that has the most points wins the treasure hunt.

RESOURCES & MATERIALS

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Getting to Know Your Heart," American Heart Association, Lower Elementary

Shoe boxes
Magazines
Paste or glue
Construction paper
Markers
Crayons

ESSENTIAL ELEMENT

Fine arts. Art. Awareness and sensitivity to natural and man-made environments. The student shall be provided opportunities to discover and explore line, color, shape, texture, value, form, and space.

LESSON OBJECTIVES

- Define the term *nutrients.*
- Discuss nutritional needs of seven and eight year olds.

ASSESSMENT CRITERIA

- Identify the nutrients.
- Identify the roles of *nutrients* in the body.

Fine Arts **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Discuss and write the following list on the board:
Food is digested and used to make:

- skin
- bones
- teeth
- hair
- muscles
- blood
- many other body parts

Explain that all body cells are constantly being replaced by new ones:

- Skin flakes and peels off daily to make room for new skin underneath.
- The body gets a whole new set of red blood cells every four months.
- The lining of the digestive track is replaced every three days.

Define ***nutrition***: It is the study of nutrients and how the body uses nutrients. There are six categories of nutrients:

- proteins
- carbohydrates
- fats
- vitamins
- minerals
- water

Refer to the teacher resource, "Our Nutrient Friends," and inform the students that they will be creating puppets that represent the nutrients.

After the puppets are made and presented, display them on a bulletin board under the heading, "Our Nutrient Friends."

RESOURCES & MATERIALS

Teacher Resource: "Our Nutrient Friends"

"Heart Explorers," American Heart Association, Grade 2

"Getting to Know Your Heart," American Heart Association, Lower Elementary

Paper sacks
Art materials of the teacher's choosing

TEACHER TIP

Additional facts about nutrients:

- **Nutrients are invisible.**
- **One cannot see vitamin C in an orange or the carbohydrates in a biscuit.**
- **Each food has several different nutrients.**
- **Milk has almost every nutrient in it. Explain that milk is the food that animals and humans feed their babies. It is the only food that babies eat for a time, so it has to supply most of the nutrients that the body needs.**
- **Each nutrient has its own special job to do for the body.**

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to experiment with art materials to understand properties and develop manipulative skills.

Our Nutrient Friends

1. Write the names and functions of the six nutrients on the chalkboard.
    - **Protein**—helps the body grow and repair itself.
    - **Carbohydrates**—provide energy for the body and help the body digest fat.
    - **Fats**—provide energy for the body and keep the body warm.
    - **Vitamins**—help the body grow, maintain health, and heal itself.
    - **Minerals**—help the body build bones and tissues and help regulate body processes like digestion.
    - **Water**—helps the body carry nutrients to the cells, helps the body get rid of waste products, and regulates the body's temperature.

2. Assign a nutrient to each student. Ask them to immediately write down the name of the nutrient by referring to the chalkboard for correct spelling.

3. Instruct each student to pick up a paper sack and art materials in order to represent their nutrient by creating a "Nutrient Friend."

4. Encourage the students to be creative as they assemble the puppets. Inform them that they will have the opportunity to share and display their puppets.

5. Instruct the students to write the information about their nutrient on the back of the paper sack, so that they can refer to this information when they present their puppets to their group.

6. When students have completed the puppets, divide them into groups of six, making sure that all the nutrients are represented in each group. Tell each group to gather in a circle. Each student will then share the name and function of their "Nutrient Friend" to the other group members.

7. When the students have completed sharing their puppets, display the puppets on a bulletin board, entitled, "Our Nutrient Friends."

Fine Arts **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss family food preferences.

ASSESSMENT CRITERIA

- Analyze individual and family food preferences.
- Categorize individual food preferences using a food grouping system.

ACTIVITIES & STRATEGIES

Ask each student to describe his or her favorite food and explain why it is special (breakfast food, lunch food, supper food, or snack food)

List each response on the board.

Review with the students the food groups as listed in "Appendix C: A Pattern for Daily Food Choices." Categorize each of the foods stated by the students according to the food groups in the guideline.

Explain that each food named is important to the person that named the food. Favorite foods will vary because everyone is different. Just as each student has a favorite food, each family has its own food preferences.

Explain that the students and their families' food preferences affect the food choices they make when buying food, eating in a restaurant or the school cafeteria, and when visiting friends at their homes.

Instruct the students to find pictures of their favorite foods or meals in magazines. Make a collage. After completion, ask some students to show their collages to the class and talk about their favorite foods.

RESOURCES & MATERIALS

"Appendix C: A Pattern for Daily Food Choices"

Magazines
Scissors
Glue
Construction paper

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, feelings in simple media including drawing, painting, printmaking, and constructing and modeling three-dimensional forms.

Health **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Define the term *nutrients.*

ASSESSMENT CRITERIA

- Define the term *nutrients.*
- Identify foods that are a major source of each nutrient class.

ACTIVITIES & STRATEGIES

Prior to class, write the name of each class of nutrients on separate sheets of paper or posterboard. The nutrient classes are protein, carbohydrates, fat, vitamins, minerals, and water.

In front of the class, stir some lemon juice or white vinegar into a glass of water. Ask the students if they can see the juice or vinegar in the water.

Explain that foods contain invisible substances called ***nutrients*** that work with the body to help people grow and have energy for work and play. The lemon juice in water is like the nutrients in food—it is there but you cannot see it.

Identify each class of nutrients and tell the students to repeat the name.

Present the following information to the class, displaying actual food samples as each of the nutrient classes is identified. Instruct the students to name other foods that could be included in each class of nutrients.

Six classes of nutrients and good sources of the nutrients are:
- Protein - meat, eggs, milk, cheese, tuna, beans, poultry
- Carbohydrates - breads, cereals, rice
- Fat - margarine, butter, vegetable oil, salad dressing
- Vitamins - fruits and vegetables
- Minerals - dairy products and green leafy vegetables
- Water - drinking water, juices, beverages

Emphasize that it is important to eat a variety of foods so the students will grow and have energy for work and play.

Display each food sample next to its nutrient class name on the paper or posterboard for the rest of the day.

RESOURCES & MATERIALS

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Getting to Know Your Heart," American Heart Association, Lower Elementary

Six sheets of paper or posterboard
A clear glass
Water
Lemon juice or white vinegar
Food samples for each nutrient class

In advance, ask the cafeteria manager to provide some food samples for each nutrient class.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

- Identify the importance of sanitary food handling and personal hygiene.
- Name solutions to unsanitary food practices.

ACTIVITIES & STRATEGIES

Invite the cafeteria manager to the class, or visit the school cafeteria as a class. Ask the manager to tell the students about the safety and sanitation regulations for food service kitchens. Talk about safe and sanitary practices in the classroom.

Present to the class the reasons for sanitary food handling.

- Stress clean hands.
  - Explain that germs which cause infection cannot be seen without a microscope.
  - Even hands that look clean should be washed before food-related activities.
  - Wash hands after coughing, blowing the nose, and using the bathroom.
- Demonstrate and tell students to practice proper hand-washing techniques.
  - Wet the hands thoroughly.
  - Lather the hands with soap, front and back, between fingers, and under fingernails.
  - Rinse the hands with clean water.
  - Dry the hands with a clean towel.
- Explain the importance of washing fruits and vegetables before eating or cooking them.
  - Insecticides and other chemicals are on them.
  - Many supermarkets wax the produce before displaying it.
- Explain the importance of clean utensils.
  - Use hot, soapy water.
  - Use clean rinse water.
  - Air drying is the best method.

Practice washing hands properly. Tell students to dip their hands in flour first so that they can tell that they have washed their hands thoroughly.

RESOURCES & MATERIALS

Flour
Water
Soap
Clean towels

TEACHER TIP

Vocabulary words for this lesson: *sanitation, clean, germs, infection, microscope,* and *utensil.*

In advance, ask the cafeteria manager to talk to the students about safety and sanitation practices.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote cleanliness and nutritional health.

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

- Identify acceptable food handling, storage, and preparation.
- Discuss proper techniques for safe food handling.

ACTIVITIES & STRATEGIES

Display a clear glass bowl, a scrub brush, and a raw potato on a table.

Ask the students:
- Should we wash our hands before we prepare food? Why?
- Should we wash fruits and vegetables before they are prepared or eaten? Why?
- Should we still wash our food if it does not look dirty? Why?
- Look at this potato. Does it look dirty?

Let the students scrub a potato with the scrub brush in the bowl.
- What do you see in the water?
- There are also germs that we cannot see.
  - These germs are in the air and on our hands.
  - They can make our food turn bad if we do not store the food properly.
- We have just seen one way to help prevent germs from getting on our food. What is it?

Take a field trip to the school's kitchen and discuss:
- proper washing techniques for fruits and vegetables
- sanitizing dishes
- keeping food safe

Health **Grade 2**

2

TEXAS EDUCATION AGENCY

RESOURCES & MATERIALS

Clear glass bowl
Scrub brush
Raw potato

TEACHER TIP

Remind students that fruits and vegetables should not be washed until they are ready to eat them. Washing removes the natural preservative, thereby causing the fruit or vegetable to spoil faster.

In advance, ask the cafeteria manager to schedule a field trip through the school's kitchen. Ask the manager to show proper techniques for washing produce, sanitizing dishes, and keeping food safe.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote cleanliness; nutritional health.

Health **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

- Identify foods that are high in fat and sugar.
- Name foods that are needed for growth, energy, and health.
- Prepare a nutritious treat.

ACTIVITIES & STRATEGIES

Ask students to name some foods that they consider to be snacks. List them on the board.

Using this list, identify the foods that are high in fat and/or sugar.

- High-fat foods: bacon, fried foods, butter, chips, avocado, peanut butter
- High-sugar foods: soft drinks, candies, pies, cookies, jelly
- High-sugar and high-fat foods: cakes, doughnuts, candy bars

If any of the high-fat foods are available, place them on a paper plate for a while. Remove the food from the paper plate to see the fat mark on the plate.

Discuss reasons for students to limit high-fat and high-sugar foods.

Make "Graham Cracker Delight" with the students, using the directions on the take-home handout.

Distribute the take-home handout, "Home-Fun Ideas," for students to share with their families.

RESOURCES & MATERIALS

Handout: "Home-Fun Ideas"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Getting to Know Your Heart," American Heart Association, Grade 2

Napkins or waxed paper
Graham crackers
Unsweetened applesauce
Cinnamon

In advance, ask the cafeteria manager to help provide some of the ingredients for the "Graham Cracker Delight."

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

Home-Fun Ideas

Dear Parents,

The American Heart Association and the American Cancer Society agree that most Americans eat too much fat and sugar.

Your child is learning which foods have fat and sugar, and which foods have important nutrients like protein, fiber, and vitamins.

Here are some ideas you can enjoy doing at home together. The list includes a recipe for "Graham Cracker Delight," which your child made at school today. **Together, you can:**

- **Make a list of favorite family snacks.**
  How many of them fall into one of these categories?
  - Fatty— fried foods, french fries, buttered popcorn, potato chips, bacon, cheese, whole milk, ice cream
  - Sugary— candy, cake, pie, cookies, many breakfast cereals, and soft drinks
- **Make an agreement to substitute healthier foods** like fresh vegetables and fruits, skim or low-fat milk, whole grain cereals, lean meat, low-fat cheese, air popped popcorn, unsalted chips or nuts, or oatmeal.
- At the bakery, **ask which breads are made with whole grains**, not just wheat flour.
- Watch everyone, children included, **gobble up "cookies" made from sliced yellow squash and zucchini** served with a dip made from nonfat plain yogurt and a ranch dip seasoning packet. Yummm! Nutritious and delicious! Offer this appetizer before dinner or during holidays.
- **Enjoy!** Easter baskets and Valentine presents do not have to be candy. Children love sugarless gum, nuts, low-sugar, O-shaped cereal, carrot muffins, grapes, and other fresh fruit.
- **Prepare *Graham Cracker Delight*** with 1 long plank of graham cracker and 1/4 cup unsweetened applesauce mixed with cinnamon. Break the long plank in half. Place 1/2 plank on a napkin or waxed paper. Spread with 2 tablespoons applesauce. Top with the other half graham cracker plank and 2 tablespoons applesauce. **Great as a snack after school!**

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

- Identify a variety of healthy fruits.
- Taste a variety of fresh fruit snacks.

ACTIVITIES & STRATEGIES

Before class, collect the fruits brought by students and the additional unusual fruits, and thoroughly wash the ones with edible skins.

Set up an easel and newsprint, draw three columns, and write these titles at the top of each column:
Fresh Fruit Super Snack, Tried Before, Liked.

Instruct the students to wash their hands. Tell them to gather where the tasting tools and food are set up.

- Distribute one fruit to each student.
- Ask each student name his or her fruit.
- If a student cannot identify his or her fruit, ask the class to help.
- Write each fruit name in the first column on the newsprint, and survey the class to see how many students have ever eaten that fruit.
- Write the number who have tried the fruit in the column, *Tried Before,* next to the fruit's name.
- Cut the fruits into bite-size pieces for tasting, and distribute to each student.
- Make a rule that students have to at least lick each fruit piece; but they do not have to eat it.
- Ask students how many liked their fruit pieces.
- Write the number who like the fruit in the *Liked* column, next to the number who have tried the fruit.

Summarize by reminding students that fresh fruits are a delicious, healthy, low-fat, protector snack food.

Encourage the students to continue to try a variety of fresh fruits when they want a snack.

Adapted from:
"Changing the Course: Lower Elementary Curriculum," American Cancer Society, p. 37-38

RESOURCES & MATERIALS

"Changing the Course: Lower Elementary Curriculum," American Cancer Society

Cutting board
Knife
Paper plates
Napkins
Easel
Newsprint
A variety of unusual fresh fruits
Low-fat or nonfat fruit yogurt (optional)

Teacher Tip

During the previous class period, ask students to bring the most unusual fruit they can find from home to class the next day.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

Health **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at mealtime.

ASSESSMENT CRITERIA

Choose a nutritious food from each of the food groups to plan a healthy meal.

ACTIVITIES & STRATEGIES

Invite the food service director or cafeteria manager to explain:
- the food groups as outlined in "Appendix C: A Pattern for Daily Food Choices"
- that certain foods are served together in the School Lunch Program

Emphasize that it is important to choose and eat foods from all the food groups. Encourage the students to limit foods like chips, cookies, candy, and soft drinks because these foods do not provide the nutrients needed to help them grow healthy and strong.

Guide the students in choosing a nutritious meal based on the food groups. Use pictures, or list menu choices of healthy and unhealthy foods on the board for students to select from.
For example:
- vegetable sticks with dip or tortilla chips
- a piece of fruit or fruit-flavored candy
- orange juice or orange-flavored soft drink
- milk or soft drink
- candy bar or oatmeal bran cookie

After each selection has been made, ask students to identify the food group for each of the nutritious foods selected.

Instruct students to plan their favorite healthy meal by drawing or cutting pictures of foods from magazines for each of the food groups, and then secure them in the appropriate sections on the worksheet, "My Favorite Healthy Meal." Cut out the meal circle and paste on a paper plate. Display the meals.

RESOURCES & MATERIALS

Worksheet: "My Favorite Healthy Meal"

"Appendix C: A Pattern for Daily Food Choices"

Picture of foods cut out from magazines or a set of cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, IL 60018-4233
(708) 696-1860 Ext. 220

"Heart Explorers" American Heart Association Schoolsite Program, Grade 1

Crayons
Magazines
Glue
Scissors

In advance, ask the food service director or cafeteria manager to speak to the class about the five food groups.

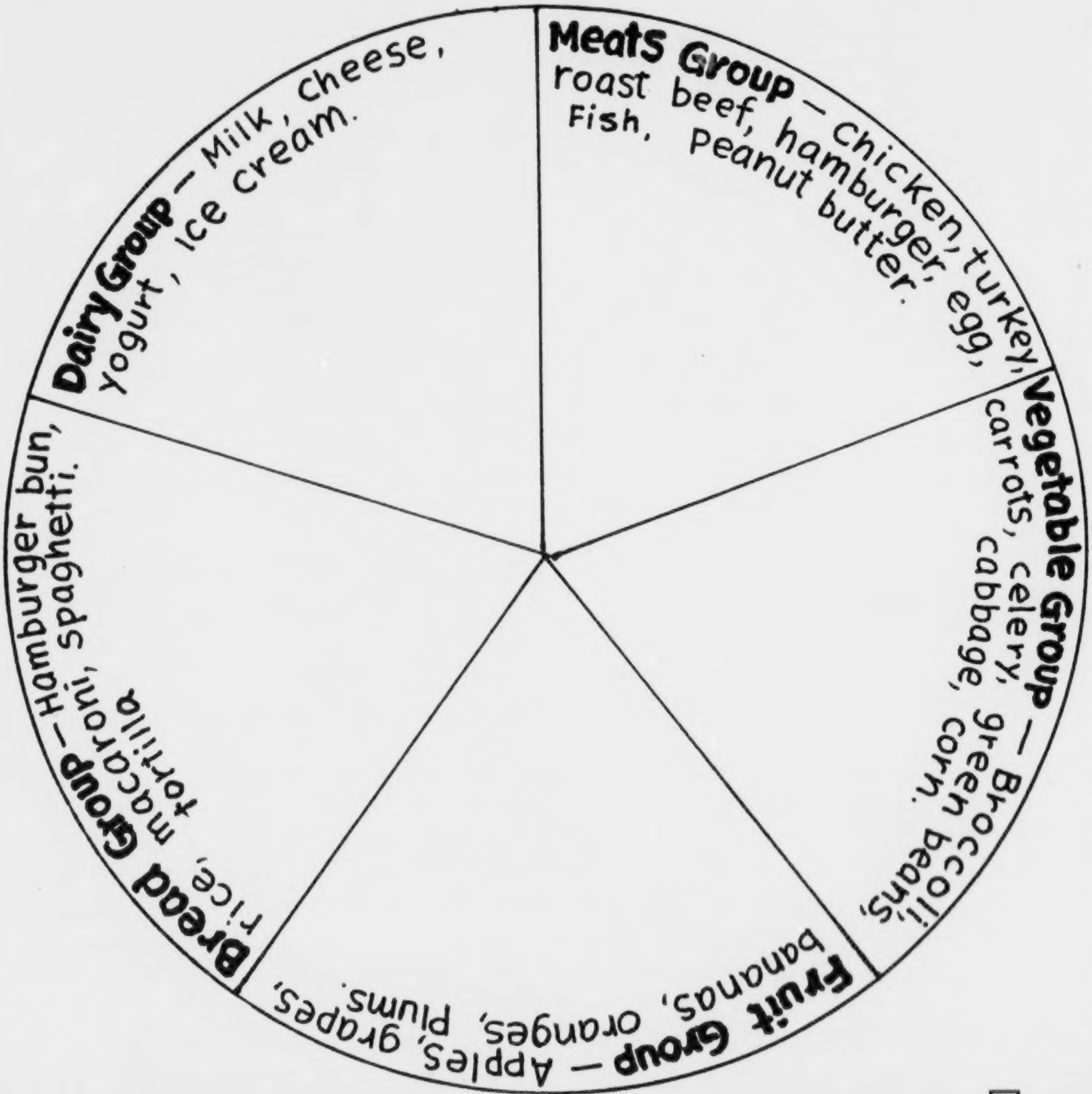
ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote nutritional health.

NAME ______________________ DATE ____________

My Favorite Healthy Meal

Draw, or cut out of a magazine, a picture of one of your favorite foods in each food group to plan your favorite healthy meal.



Meats Group – Chicken, turkey, roast beef, hamburger, egg, Fish, Peanut butter.

Vegetable Group – Broccoli, carrots, celery, green beans, cabbage, corn.

Fruit Group – Apples, grapes, bananas, oranges, Plums.

Bread Group – Hamburger bun, macaroni, spaghetti, rice, tortilla

Dairy Group – Milk, cheese, Yogurt, Ice cream.

LESSON OBJECTIVE

Classify foods using a food grouping system.

ASSESSMENT CRITERIA

Identify the food groups and categorize various foods in each group.

Health **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain to the class that foods are divided into five groups. The foods are classified into the five different groups according to the nutrients that each food contains. Eating a variety of foods from each of the food groups will provide our bodies with the nutrients needed to stay healthy.

Using "Appendix C: A Pattern for Daily Food Choices" as a resource, name the five groups for the class and give examples of foods that are in each of the groups.

- Vegetables
- Fruits
- Bread, Cereals, Rice, and Pasta
- Milk, Yogurt, and Cheese
- Meat, Poultry, Fish, Dry beans and Peas, Eggs, Nuts, and Seeds

Calories in food give us energy. Foods that are high in calories usually contain high amounts of fat and/or sugar and are low in nutrients. These foods are considered *extra*, and may be eaten in limited amounts during the day. Examples of extra foods include: salad dressing, margarine, honey, candy, jams, jellies, soft drinks, potato and corn chips, pretzels, cookies, cakes, gravy, syrup, catsup, oil, and bacon.

Name various foods and have the students identify the food group for each food named.

Write at least one day of the school breakfast and lunch menus on the board. Ask different students to identify the food group for each menu item.

Distribute and review the worksheet, "In Which Group Do I Belong?" with the students. After completion, review the answers with the class.

RESOURCES & MATERIALS

Worksheet: "In Which Group Do I Belong?"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Appendix C: A Pattern for Daily Food Choices"

School breakfast and lunch menus

ANSWER KEY

1.	C	Yogurt	16.	A	Green beans
2.	B	Bananas	17.	D	Spaghetti
3.	D	Bagels	18.	E	Sunflower seeds
4.	C	Cheddar cheese	19.	B	Oranges
5.	A	Celery	20.	E	Peanut butter
6.	E	Eggs	21.	C	Swiss cheese
7.	B	Tomatoes	22.	B	Apple juice
8.	D	Rice	23.	D	Hamburger bun
9.	B	Watermelon	24.	E	Pinto beans
10.	C	Milk	25.	A	Lettuce
11.	A	Broccoli	26.	B	Raisins
12.	A	Carrots	27.	D	Oatmeal
13.	D	Macaroni	28.	E	Roast beef
14.	B	Strawberries	29.	D	Tortilla
15.	E	Pork chops	30.	A	Corn

Invite the cafeteria manager to the class to explain how menus are planned.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify practices that promote nutritional health.

NAME ______________________________ **DATE** ______________

In Which Group Do I Belong?

Fill in the blanks with the letter of the right food group.
A. Vegetables
B. Fruits
C. Milk, Yogurt, Cheese
D. Breads, Cereals, Rice, and Pasta
E. Meat, Poultry, Fish, Dry beans and Peas, Eggs, Nuts and Seeds

1. ______ Yogurt
2. ______ Bananas
3. ______ Bagels
4. ______ Cheddar cheese
5. ______ Celery
6. ______ Eggs
7. ______ Tomatoes
8. ______ Rice
9. ______ Watermelon
10. ______ Milk
11. ______ Broccoli
12. ______ Carrots
13. ______ Macaroni
14. ______ Strawberries
15. ______ Pork chops
16. ______ Green beans
17. ______ Spaghetti
18. ______ Sunflower seeds
19. ______ Oranges
20. ______ Peanut Butter
21. ______ Swiss cheese
22. ______ Apple juice
23. ______ Hamburger bun
24. ______ Pinto beans
25. ______ Lettuce
26. ______ Raisins
27. ______ Oatmeal
28. ______ Roast beef
29. ______ Tortilla
30. ______ Corn

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Demonstrate skill exercises that are important to health and fitness.

ACTIVITIES & STRATEGIES

Emphasize that exercise and good food promote fitness. Exercising vigorously and eating healthy, natural fruit snacks are important for staying healthy.

Divide the students into teams of four or five for "Action-Orange Relays." Tell students to give their teams a healthy snack food name and tell why their snack food is healthy. Examples of team names: Happy Apples, Terrific Toast, Beautiful Broccoli, Crunchy Celery, Chewy Raisins, Gooey Bananas.

"Action-Orange Relay" rules:
- The players on each team line up behind each other.
- The first person is the "Healthy Snack Food" team leader.
- The team leaders are given one orange.
- At a signal, each team passes the orange from the first player to the last player, then back again.

Play the relay game seven times and follow the instruction numbered for each game played.
1. Pass the orange using both hands.
2. Pass the orange using right hand only.
3. Pass the orange using left hand only.
4. Pass the orange touching it to the floor.
5. Pass the orange over the head.
6. Pass the orange between the knees.
7. Pass the orange alternately over head and between knees.

Tell the students to wash their hands. The team that won the most, gets to go first.

Wash the oranges.

Assist each team as they cut up an orange and share it. Cut additional oranges, if necessary.

RESOURCES & MATERIALS

Ten oranges

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to identify daily practices that promote habits of rest, sleep, posture, and exercise.

Language Arts Grade 2

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Recall nutrition information.
- Prepare a nutritious food.
- Evaluate the taste and texture of some uncommon nutritious foods.

ACTIVITIES & STRATEGIES

Define *nutritious food*: a food that provides the body with the fuel it needs for strength, growth, and energy.

Instruct the students to sit in a circle. Tell them that they must listen carefully to some important information and then repeat the information to someone. To test their abilities, students will play a game called the *Telephone Game*.

Explain that you will whisper the name of a nutritious food and a fact about it into someone's ear. That student, in turn, will whisper what he or she has heard into the ear of another student to the left or right. Each student will whisper to the next student whatever he or she has heard. The last student to hear the message will say it aloud. Rotate places so the same student will not always be last.

After the first message has been passed around the circle, discuss the resulting message and point out that the message was misunderstood each time it was repeated.

These are some messages to get the game started:
- Buttermilk does not have butter. It is low in fat.
- Plain yogurt is not plain if you mix it with fruit.
- You do not have to be a farmer to like low-fat farmer cheese.
- Buckwheat is a delicious grain that looks and tastes like wheat.
- Zucchini is a vegetable that comes in several sizes and colors.
- Kiwi is a furry fruit that tastes like strawberries and bananas.
- Bean sprouts are a food you might in your sandwich instead of lettuce.
- Prunes are wrinkled, and they taste as sweet as candy.

After each round, tell the students the original message. Ask them if they have ever tasted the food and whether they know any more nutritious facts about the food?

Have a tasting party of some uncommon nutritious foods. Let the students watch you make the Vege-cookies recipe provided on the handout, "Nutritious Goodies." Encourage students to make the goodies with their families.

RESOURCES & MATERIALS

Handout: "Nutritious Goodies"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Children's Help Your Heart Cookbook," American Heart Association

"Getting to Know Your Heart," American Heart Association, Lower Elementary

Knife
Plate
Serving platter
Stirring spoon
One 8-ounce plain nonfat yogurt
One ranch-type dip seasoning packet
One large yellow squash
One large green zucchini

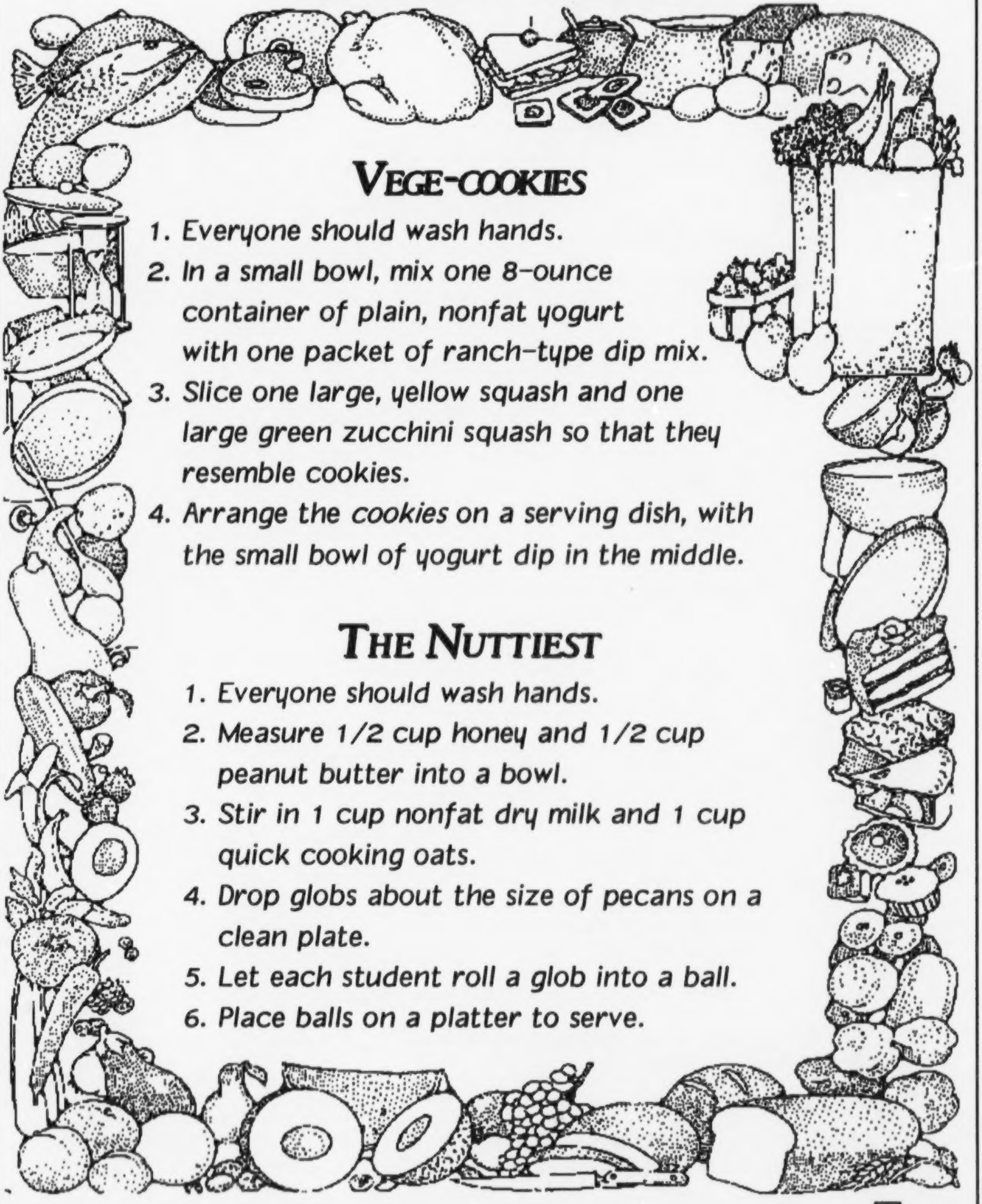
In advance, ask the cafeteria manager to provide some of the recipe ingredients.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to identify the main idea of a speaker's message.

NAME ______________________ DATE ______________

Nutritious Goodies



VEGE-COOKIES

1. Everyone should wash hands.
2. In a small bowl, mix one 8-ounce container of plain, nonfat yogurt with one packet of ranch-type dip mix.
3. Slice one large, yellow squash and one large green zucchini squash so that they resemble cookies.
4. Arrange the *cookies* on a serving dish, with the small bowl of yogurt dip in the middle.

THE NUTTIEST

1. Everyone should wash hands.
2. Measure 1/2 cup honey and 1/2 cup peanut butter into a bowl.
3. Stir in 1 cup nonfat dry milk and 1 cup quick cooking oats.
4. Drop globs about the size of pecans on a clean plate.
5. Let each student roll a glob into a ball.
6. Place balls on a platter to serve.

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Describe some healthy snack foods.

Language Arts Grade 2

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Display several "help wanted" advertisements from the classified sections of the newspaper.

Ask the students the following questions:
- Have you ever seen a "help wanted" advertisement?
- Where are these advertisements found?
- Who reads the "help wanted" advertisements?
- What is the purpose of a "help wanted" advertisement?

Distribute the "help wanted" ads from the newspaper. Tell the students to find some detailed examples of advertisements and ask them to read several examples aloud.

Ask the students to name some healthy snacks and list them on the board. Instruct the students to select one healthy snack and write a descriptive "healthy snack food wanted" advertisement about the food without naming it. For example:
- Wanted: a yellow fruit with skin that strips off easily. Should be willing to work with cereals.
- Wanted: a healthy, cold, white, low-fat drink that helps the bones grow strong.

Introduce the game, "Name that Healthy Snack." Explain that the class will guess the name of the healthy snack described in the advertisement. Tell each student to read his or her advertisement and allow the class to guess the food. Then, ask the class if anyone has eaten the advertised healthy snack food, and discuss why the food is healthy.

RESOURCES & MATERIALS

Several "help wanted" advertisements from the classified section of the newspaper

Pencil and paper

ESSENTIAL ELEMENT

Language arts. Writing. Applying the convention of writing to produce effective communications. The student shall be provided opportunities to use basic conventions of capitalization and punctuation and to write legible manuscript letters.

LESSON OBJECTIVE

Explain the importance of breakfast.

ASSESSMENT CRITERIA

Describe reasons breakfast is important.

Language Arts Grade 2

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Allow students to brainstorm some reasons that breakfast is needed. Write their suggestions on the board.

- Bodies need fuel for energy like cars need fuel to make them go.
- Minds need fuel to help them think better.
- Bodies and minds need fuel to keep them healthy and to prevent illness.
- Breakfast is *breaking the fast*. It has been 10-12 hours since the last meal.
- The body's energy level decreases just like a campfire and both need fuel in the morning.

Discuss the different places that breakfast is eaten such as homes, schools, or restaurants.

Distribute the worksheet, "Break the Fast." Explain that students will write a letter to their parents informing them of the importance of breakfast. Students can also write a letter to the cafeteria manager explaining why they like to eat breakfast in the cafeteria.

RESOURCES & MATERIALS

Worksheet: "Break the Fast"

TEACHER TIP

School breakfast is available for all students. It may be free, reduced, or purchased.

Check with the cafeteria manager to see if Early Bird posters are available and can be displayed in the cafeteria when this lesson is presented.

ESSENTIAL ELEMENT

Language arts. Writing. Developing skills in writing effectively for a variety of purposes, modes, and audiences. The student shall be provided opportunities to use a variety of prewriting activities as sources for later writing.

NAME ______________________________ DATE ________________

Break the Fast

Dear ______________________________,

We have been studying how to **break the fast** by eating breakfast.

It is important for me to eat breakfast each day because

____

____

____

____

____

Love,

____

Language Arts Grade 2

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Determine the results of unhealthy food habits.

ASSESSMENT CRITERIA

Recognize the importance of eating a variety of foods to stay healthy.

ACTIVITIES & STRATEGIES

Instruct the students to name their favorite foods, then ask the following question:
How would you feel if you were only allowed to eat that one food for every meal including snacks?

Read *Bread and Jam for Frances* to the class. Use the following questions to lead a discussion about the book:
- Why did Frances' mother give Frances bread and jam for every meal?
- How did Frances feel after she had eaten only bread and jam for two days?
- What suggestions do you have to improve Frances' diet?

Instruct the students to name some foods that are served in the school cafeteria (main dish, vegetables, fruits, salads, breads, desserts, and beverages). List each food on the board as it is named.

Point out that the school lunch provides a variety of food choices.

Emphasize that eating only one or just a few foods does not provide the nutrients their bodies need for energy, growth, and health.

Divide the class into groups to write a group story about someone who only ate their favorite food for a week. Ask each group to share their story with the class.

RESOURCES & MATERIALS

Bread and Jam for Frances by Russell Hoban

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

"Getting to Know Your Heart," American Heart Association, Lower Elementary

School lunch menu

Teacher Tip

If the students have difficulty remembering all the foods, the lesson could be extended through the week so they could write down the items and put them in the corresponding category.

In advance, ask the cafeteria manager to provide a school lunch menu.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skill in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to identify the main idea of a speaker's message and respond to a speaker by asking questions and contributing information.

Mathematics **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at mealtime.

ASSESSMENT CRITERIA

- Identify problems with the overuse of salt in the diet.
- Name foods with a high salt content.

ACTIVITIES & STRATEGIES

Explain that salt contains a mineral called ***sodium***.
- It is a mineral that can lead to high blood pressure in some people.
- A lifetime of eating high-sodium foods may cause heart disease, strokes, or kidney problems.

Ask students to name some foods that are high in sodium, and write them on the board.

A list of some foods that are high in sodium:
- chips
- catsup
- pickles
- canned soups
- soy sauce
- olives
- cheese
- hot dogs, bologna, bacon
- salt

Let the students make Saltless Seasoning Mix individually or in small groups. Distribute the supplies. Encourage students to take at least one turn at measuring the ingredients.

Mix the ingredients in plastic zipper bags or other containers such as cans or jars.

Instruct students to draw a picture or write a message (Roses are red, violets are blue, I left out the salt, because I love you!) on a small note paper.

Attach it to the container and give it to a family member.

RESOURCES & MATERIALS

Measuring spoons
Plastic zipper bags for each student (or Containers of choice)
Paper and colored markers or crayons
Saltless Seasoning Recipe:
1 teaspoon ground celery seed
2 1/4 teaspoons crushed marjoram
2 1/2 teaspoons crushed summer savory
3/8 teaspoon crushed thyme
1 1/2 teaspoons crushed basil

In advance, ask the cafeteria manager to use the Saltless Seasoning in one day's menu, and tell the students when it will happen.

ESSENTIAL ELEMENT

Mathematics. Measurement. Concepts and skill using metric and customary units through the use of concrete models. The student shall be provided opportunities to estimate and measure the weight/mass of an object.

Science **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Define the word *vitamins*.
- Explain the importance of vitamin C in the diet.

ACTIVITIES & STRATEGIES

Define the word, ***vitamins***, on the board: Organic compounds that are necessary in the diet in small amounts for normal growth, maintenance of health, and reproduction.

Vitamins are necessary for staying healthy. Our bodies cannot live without vitamins.

Ask the students what they know about vitamin C. Write the functions of vitamin C on the board.
- It helps fight infection.
- It helps form the cells that carry oxygen in the blood.
- It helps heal wounds.

Orange juice contains vitamin C. Ask the students which type of orange juice has the most vitamin C, fresh or frozen? Tell each student to form an hypothesis and then to conduct the following investigation to find out which type of orange juice has the most vitamin C.
1. Make a vitamin C indicator by stirring a teaspoon of cornstarch into a cup of boiling water. Cool the mixture. Add drops of iodine while stirring the solution. Keep adding until the mixture turns blue.
2. Pour a small amount of the indicator into a test tube or drinking glass. Start adding drops of the frozen orange juice until the blue color disappears. Record the number of drops it takes.
3. Repeat the same process with the fresh orange juice.
4. The more drops it takes for the blue color to disappear, the less vitamin C is present.
5. Discuss the various conclusions.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

Measuring spoons
Iodine
Cornstarch
Measuring cup
Test tubes or small drinking glasses
Eyedropper
100 percent frozen orange juice
Fresh squeezed orange juice

TEACHER TIPS

- **Iodine is a poisonous substance and should not be taken internally. Do not allow students to drink the orange juice used in this experiment.**
- **Be sure to reconstitute the frozen orange juice.**
- **Do not use low-acid orange juice.**

ESSENTIAL ELEMENT

Science. Draw logical inferences, predict outcomes, and form generalized statements. The student shall be provided opportunities to predict the outcomes of actions based on experience or data.

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Identify the type of food that yeast will grow on.

Science **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Yeasts are fungi that require sugar, proper temperature, and moisture for growth. Yeast consumes the sugar in food products and spoils the food in the process. Yeast organisms can be killed by heating the food product to 136 degrees F (56 degrees C) for 15 minutes.

Perform the following demonstration to prove that yeast grows on sugar.
1. Label two bottles *NO FOOD* and *SUGAR*.
2. Put a teaspoon of sugar in the bottle labeled *SUGAR*.
3. Put a teaspoon of dry yeast into each bottle.
4. Add one cup of warm water to each bottle.
5. Stretch a balloon over each bottle.
6. Put the bottles in a warm, dark place overnight.
7. Observe the balloons the next day.

The balloon over the bottle containing the sugar should have expanded because of the production of carbon dioxide, showing that the yeast was breaking down the sugar.

Discuss ways in which yeast is useful to us. (bread, rolls, crackers, cheese)

Option: Use commercially prepared pizza dough so students can observe bread dough rising. The pizza dough generally rises rapidly—five to eight minutes.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

Balloons
Bottles
Yeast
Sugar
Water

TEACHER TIPS

- **Do not allow students to taste the mixture.**
- **Advise them to handle the bottles carefully to avoid broken glass.**

In advance, check with the cafeteria manager about the class touring the cafeteria to see bread being proofed.

ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to observe properties and patterns of objects, organisms, and events in the environment.

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

- Discuss the functions of calcium in the diet.
- Identify the main source of calcium.

Science **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Calcium is needed for bone rigidity, blood clotting, muscle contraction, and normal nerve functions. Pass around different bones for the students to observe.

Stress that bones are composed of living cells; a broken bone will heal itself. Also point out that bones are hard because of calcium and other minerals in the bone tissue.

Explain that it is important to drink three glasses of milk and eat milk products every day because milk products are our main source of calcium.

Soft drinks contain a mineral called *phosphorus*. When large quantities of carbonated beverages are consumed, bones may weaken because the phosphorus keeps the calcium from being used by the body. Do this test to show students how cola affects bones and teeth.

1. Place a small bone in a glass and cover it with cola or a similar soft drink (not diet).
2. Place a similar bone in a glass and cover it with water as a control.
3. Observe what happens to the bones for five days, and tell students to record their observations on the worksheet, "The Effects of Cola on Bones and Teeth."
4. Tell students to write their conclusions in the space below the observation chart.

RESOURCES & MATERIALS

Worksheet: "The Effects of Cola on Bones and Teeth"

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

Cola drink (not diet)
2 glasses
Small bones or thin bone fragments

TEACHER TIP

Remind students never to eat or drink foods used in an experiment. Direct students to wash their hands after completing the experiment.

ESSENTIAL ELEMENT

Science. Draw logical inferences, predict outcomes, and form generalized statements. The student shall be provided opportunities to predict the outcomes of actions based on experience and data.

NAME ______________________________ **DATE** ________________

The Effects of Cola on Bones and Teeth

1. Place a small bone (from chicken or steak) in a glass.
2. Cover it with cola or a similar soft drink (not diet).
3. As a control, place a similar bone in a glass and cover it with water.
4. Observe both glasses for five days to see what happens to the bones; instruct students to record their observations on the chart below.

DAY #/ DATE	BONE IN WATER	BONE IN COLA
1		
2		
3		
4		
5		

Conclusions:

Science **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

- Recognize that peanut butter is a healthy snack food.
- Describe how peanut butter is made.

ACTIVITIES & STRATEGIES

Explain the history of the peanut.

About 100 years ago farmers discovered that planting peanuts instead of cotton would enrich the soil; however, peanuts were of little value to the farmers and often rotted in the warehouses.

George Washington Carver, a black scientist, discovered that peanuts were high in protein, carbohydrates, and unsaturated fat. Carver is credited with developing more than 300 products from the peanut. He could make a whole meal from soup to dessert by using just peanuts. He found a rich, valuable oil in the peanut and also developed peanut butter, his most famous product.

Peanut butter is a nutritious food because it is high in protein, fiber, and B vitamins, but it contains a high amount of monounsaturated fat. Peanut butter is good on bananas, apples, or wheat crackers. It makes an excellent snack when it is served with a glass of cold, low-fat milk.

Follow these instructions in making peanut butter:

1. Put two packages of shelled, salted, and roasted peanuts into a mortar.
2. Using the pestle, grind the peanuts into small particles.
3. Continue grinding until oil is released and blends with the tiny particles of nut to form peanut butter.
4. Enjoy a taste of your freshly made peanut butter.

After everyone has tasted the homemade peanut butter, ask the class to orally repeat the steps of the procedure for making peanut butter. Ask them to describe the appearance of the mixture during the procedure.

RESOURCES & MATERIALS

The Gold Peanut. Produced by Custom Comic Services. Educational and Promotional Comic Books, P. O. Box 50028, Austin, Texas 78763

Copies of *The Gold Peanut* and other educational materials on peanuts are available from the National Peanut Council, 101 S. Peyton St., Suite 301, Alexandria, VA 22314

A clean, sterilized mortar and pestle or a blender
2 small packages of shelled, salted, roasted peanuts

ESSENTIAL ELEMENT

Science. The use of skills in acquiring data through the senses. The student shall be provided opportunities to: observe patterns in properties of selected plants, animals and objects.

Science **Grade 2**

2

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explore new foods in each food group.

ASSESSMENT CRITERIA

Classify unfamiliar food items according to each food group.

ACTIVITIES & STRATEGIES

Display the transparency, "Appendix C: A Pattern for Daily Food Choices." Discuss the different food groups.

Place an unfamiliar food item in a grocery bag. Ask several students to touch it without looking in the bag.

Ask the students to guess what the food item might be.

Reveal each food item found in the bag and ask students to classify the unfamiliar food items in the appropriate food groups.

Unfamiliar food items and their food groups:

FOOD ITEM	FOOD GROUP
• eggplant	Vegetables
• pita bread	Breads, Cereals, Rice, & Pasta
• jicama	Vegetables
• snow peas	Vegetables
• figs	Fruit
• kiwi	Fruit
• tortellini	Breads, Cereals, Rice, & Pasta
• string cheese	Milk, Yogurt, & Cheese
• garbanzo beans	Meat, Poultry, Fish, Dry beans and Peas, Eggs, Nuts, & Seeds

Pass around a sample plate of some of the unfamiliar food items that were in the bag. Encourage students to taste them.

Discuss different ways that these foods might be used.

RESOURCES & MATERIALS

Transparency: "Appendix C: A Pattern for Daily Food Choices"

School lunch menu

Paper sack
Paper plate and knife
Eggplant
Pita bread
Jicama
Snow peas
Figs
Kiwi
Tortellini
String cheese
Garbanzo beans
Other unusual foods

TEACHER TIP

Some foods that have been handled by the students may not be appropriate for tasting; therefore, additional food supplies may be necessary.

In advance, ask the cafeteria manager to review the school lunch menu for unfamiliar foods to encourage students to eat lunch in the cafeteria on that day.

ESSENTIAL ELEMENT

Science. Relate objects and events to other objects and events. The student shall be provided opportunities to relate objects, science principles, and activities to daily life.

LESSON OBJECTIVES

- Develop an appreciation for foods from different cultural groups.
- Examine food traditions.

ASSESSMENT CRITERIA

Discuss the food contributions made by the African Americans.

Social Studies **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Read together, and complete as a class, the worksheet, "History of the African Americans in Texas."

Point out the contributions that the African Americans made to American food customs such as black-eyed peas, hush puppies, fried catfish, fried chicken, grits, sweet potato pie, cornbread, and okra. It is important for the students to understand that these foods appeared in the menu because of the African Americans' creativity in using the limited foods that were available to them.

These foods may or may not be part of the diet of the black students in Texas today, just as some of the foods eaten by the Native Americans are not familiar to the American Indians living today.

Lead a discussion to help the students appreciate the food contributions made by the African Americans.

Ask the following or similar questions:

- How do you feel about trying new foods?
- Why is it important to understand the origins of some foods in the United States?

Make a "Sweet Potato Casserole" from the recipe in the opposite column. Serve a small portion of the casserole to each student, and discuss the taste of this new food. Note that peanuts are used in the recipe.

Point out the contribution made by George Washington Carver, an African-American scientist who discovered more then 300 uses for the peanut.

RESOURCES & MATERIALS

Worksheet: "History of the African Americans in Texas"

"Cultural Awareness: African Americans in Texas" found at the beginning of second grade *ESR IV* lesson plans

Sweet Potato Casserole
6 medium sweet potatoes, peeled
1 cup brown sugar
2 tablespoons margarine
1/2 teaspoon cinnamon
1/2 teaspoon nutmeg
1/2 teaspoon allspice
1/2 teaspoon cloves
1 cup milk (evaporated skim)
1 teaspoon vanilla
Finely chopped peanuts
Grate potatoes. Mix all ingredients well, top with nuts, and bake in a greased 11X13 baking dish at 350° until set and slightly brown on top.

TEACHER TIP

February is Black History Month.

In advance, ask the cafeteria manager if the cafeteria oven can be used for the casserole.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe family traditions and customs.

NAME ______________________________ DATE ______________

A History of the African Americans in Texas

African American refers to a group of persons having origins in the black racial groups of Africa. Most of the African Americans in Texas did not immigrate to the United States by choice but were brought to America as slaves. The male slaves were required to work long, hard hours in factories, cotton and tobacco fields, or sugar plantations. The female slaves as well as their children were responsible for cooking and cleaning the large plantation houses, in addition to working in the fields.

The African American slaves combined food customs from Africa with the foods grown in the South to create their own style of cooking. Slaves were usually given unused meats and the less expensive parts of animals such as the small intestines of pigs, pigs' feet, hog jowl, and organ meats. Rabbit, squirrel, and catfish were hunted for additional meat sources. Some slaves were allowed to have small gardens to provide inexpensive and readily available foods. Okra, corn, turnip greens, collard greens, potatoes, black-eyed peas, sweet potatoes, and pecans were easily grown in the rich soil in the South. The slaves used their creativity with the limited variety of foods to create the following dishes:

- Chitterlings—The small intestines of a pig which are boiled or fried.
- Hush puppies—Cornmeal batter which is fried.
- Hopping John—Spicy black-eyed peas mixed with rice.
- Grits—Coarsely ground white corn, usually served as a breakfast food.
- Shoofly pie—Crumb crust pie with filling of molasses, brown sugar and spices.
- Corn pone—Cornbread made without milk or eggs, and baked or fried.
- Sweet potato pie—A pie made with sweet potatoes.

1. Most of the African Americans were brought to America to be ________________.

2. Name three types of meat eaten by African Americans on plantations.

a. ____________________ b. ____________________ c. ____________________

3. Name four foods grown in the rich soil of the South. a. ________________

b. ____________________ c. ____________________ d. ____________________

4. Coarsely ground white corn served for breakfast are ______________ .

5. Small intestines of a pig, boiled or fried, are ________________________ .

6. Fried cornmeal batter are ______________________ .

7. Spicy black-eyed peas and rice is ________________________ .

LESSON OBJECTIVES

- Explore foods from different cultures and categorize them using a food grouping system.
- Investigate the customs of the African-American cultures.

ASSESSMENT CRITERIA

- Identify foods from different cultures.
- Classify foods according to the food groups.

Social Studies **Grade 2**

2

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Prior to class, review the "African Americans in Texas" resource material found at the beginning of the second grade *ESR IV* lesson plans.

Explain to the class that the United States is a very young country. People came to America from many different countries like Spain, France, Germany, China, Japan, and the continent of Africa. Each group brought their own style of cooking delicious foods.

Give the students a brief history of the African Americans in Texas using the information from the "African Americans in Texas" resource section.

Inform the students that this lesson will help them learn about foods from the African-American culture and to classify them according to the five food groups.

Write the five food groups across the top of the board as column headings, as listed in "Appendix C: A Pattern for Daily Food Choices."

Randomly discuss each of the foods listed in the opposite column without revealing the food group. Instruct the students to categorize the food into the correct food group while you write the name of the food under the appropriate column heading on the board.

Ask the students if they have eaten any of these foods.

In advance, ask the cafeteria manager to plan an African-American day with a special menu. Have students help with planning the menu.

RESOURCES & MATERIALS

"African Americans in Texas" found in the beginning of the second grade *ESR IV* lesson plans

"Appendix C: A Pattern for Daily Food Choices"

Vegetable group
- Collard greens
- Potatoes
- Sweet potatoes
- Turnip greens

Fruit group
- Peaches
- Plums

Bread group
- Corn pone: Cornbread made without milk or eggs, and baked or fried
- Grits: Coarsely ground white corn usually served as a breakfast food
- Hush puppies: Fried cornmeal batter
- Hopping John: Spicy black-eyed peas and rice

Milk group
- Buttermilk

Meat group
- Catfish
- Chitterlings: Small intestines of a pig, boiled or fried
- Fried chicken
- Ham
- Hopping John: Spicy black-eyed peas and rice
- Rabbit

TEACHER TIP

The student needs to understand that the foods listed were significant to the African-American slaves and may not be familiar to the black student today. Slaves played a key role in farming and ranching and the foods they ate were the results of their creativity to make the best of their limited resources.

ESSENTIAL ELEMENT

Social studies. Historical data about Texas, the United States, and the world. The student shall be provided opportunities to identify individuals of past and present significance to the community.

Education
for
Self-Responsibility IV:

NUTRITION EDUCATION

GRADE

3

TEXAS EDUCATION AGENCY

ESR IV

German, Czech, and Polish Americans in Texas

Grade Three

THE GERMAN TEXANS

The Republic of Texas was anxious for new settlers, so land grants were sold to immigrants coming to the United States from various countries in Europe. In 1842, two Americans, Henry Fisher and Burchard Miller, received grants for land between the Colorado and Llano rivers and later sold them to a group of Germans who became the first organized group of German settlers in Texas.

In 1846, the Texas census reported 218 Germans living in Texas, and by 1860, there were approximately thirty thousand German Texans. This number had increased to 120,000 by 1900. German immigrants settled primarily in the Galveston, Houston, and San Antonio areas, as well as the valleys between the Colorado and Brazos rivers. While some German immigrants came to Texas as explorers and from a sense of wanderlust (an adventurous urge to see distant places), the majority of Germans came to Texas seeking economic and social improvement.

Germans were the largest group of the Europeans that immigrated to Texas. They bought lands from railroad companies, former plantation owners, and frontierspeople who were moving to an area that is now West Texas. Today, German Texans are the fourth largest ethnic group in the state.

Liberty, the first German town in Texas, was founded by Friedrich Ernst in 1838. Ernst was a successful tobacco grower and planned to open a cigar factory that would provide job opportunities for German residents. He encouraged Germans to settle there by writing about Texas' rich land, political freedom, unlimited opportunities, and favorable climate in letters to German individuals and articles for German newspapers. The first steady stream of German immigration to Texas began soon after these publications and continued as late as the 1920s. Ernst became known as "The Father of German Immigration in Texas," and Liberty became a popular stopping place for German immigrants as they traveled to their new homes in the interior of Texas.

Prince Carl of Solms-Braunfels was another German who influenced immigration into Texas. He was selected as the administrator for the "Society for the Protection of German Immigrants in Texas" which intended to purchase a land grant in Texas, but instead bought an obligation to colonize on a three million acre grant near Austin. Prince Carl purchased coastal land and established a port at Carlshafen, later named Indianola, to serve as a port of entry for German immigrants. He also established the town of New Braunfels, a way station where the Germans could locate until the three million acre land grant could be cleared for settlement. In 1845, John O. Meusebach replaced Prince Carl as administrator of the Society and founded the town of Fredericksburg. Many German descendants still live in these areas.

Many German traditions are still honored by the descendants of the early German immigrants. The ***Easter Fires Pageant*** is a tradition that stems from the Fredericksburg settlement and Meusebach's treaty with the neighboring Comanches. Meusebach met with the Comanches in the hills near Fredericksburg the night before Easter in 1847 to finalize the terms of the peace treaty. The Comanches posted guards in the hills during the meeting and built fires that were to serve as signals in the event that Meusebach and his group tried to trick the Comanches. Legend says that a woman tried to comfort the scared children of Fredericksburg by telling them that the fires were built by the Easter rabbits for cooking Easter eggs. The citizens of Fredericksburg reenact the story every year in the Easter Fires Pageant.

Many Christmas traditions such as Christmas carols (Stille Nacht or Silent Night) and Christmas trees were brought to the United States by German immigrants. In Germany, people cut fir trees, brought them home, and decorated them with candles, sugar cookies, silver-papered nuts, and glass ornaments. The adults would decorate the trees on Christmas Eve behind closed doors, and after a simple supper, the father would light the candles, and Santa Claus would leave presents unwrapped under the tree. A small bell would ring, meaning that Santa had left, and the door would open for the children to come see the tree and their presents. This tradition was continued by German immigrants in Texas; however, families used cedar trees because there were no fir trees in Texas.

The Germans had many celebrations, or fests. Older fests include Saengerfests (singing fests) and Schutzenfests (shooting fests). A newer fest, ***Wurstfest***, is an annual ten-day fall festival in New Braunfels which began in 1961 to celebrate German food and tradition brought to the area by settlers in the 1840s. The ***June Berges Fest*** in

Boerne and the ***Brenham Maifest*** in Brenham offer sausage, kraut, pretzels, pumpernickel bread, ice cream, music (oompah bands), dancing, craft shows, and parades.

THE CZECH TEXANS

The Czechs are Slavic people who emigrated from areas such as Bohemia and Moravia. Despite brief periods of freedom, the Czechs have been ruled by foreign power, and consequently, their ethnicity has been based on culture, rather than national origin.

Czech immigration to the United States began as early as 1633 when Augustine Hermann settled in New Amsterdam, but it was not until 1852 when the first organized group of Czechs landed in Galveston. Most were farmers and settled in the areas of Dallas, Houston, and San Antonio. The town of Fayetteville was originally a German town, but remains a predominantly Czech town today.

Most of the early Czech immigrants were farmers who settled in central Texas. They wanted to keep their language which is currently the third language spoken in Texas, following English and Spanish. Reading clubs became common among fellow immigrants to share books written in Czech, and Czech newspapers were used in Czech schools to help teach reading. The first Czech Texan newspaper was established at La Grange in 1879.

Sokol is an organization where members are taught physical fitness in the form of gymnastics, Czech history, and Czech culture. Their motto is "A Sound Mind in a Sound Body." While under foreign rule, Czechs were forbidden to have cultural, political, or social organizations, but they were allowed the gymnastics societies. Several Sokols still exist in Texas; these are clubs where families can visit, dance, learn gymnastics, and learn about Czech history and culture.

Many of the traditional Czech customs have been altered or have disappeared, but most of the traditional Czech foods have remained and are found at Czech festivals. The ***Ennis Polka Festival*** is held in May and offers dancing to polka music and traditional Czech food, including sauerkraut, potatoes, soups, pork, and kolaches (pastries) with a variety of fillings. Another festival is held at Praha, between Flatonia and Schulenburg, in mid-August and offers traditional food, dancing, and a carnival. The towns of West and Caldwell are also famous for their kolaches.

THE POLISH TEXANS

In 1854, one hundred and fifty Poles landed at Galveston, made their way into central Texas, and established the first Polish colony, Panna Maria, near San Antonio. The oldest Polish church and school still remain in this village where many Polish people still live today.

Polish immigrants also established the towns of White Deer, Bandera, Chappell Hill, and Navasota, and in the 1870s, Bremond became the headquarters for extensive Polish immigration to Texas. Although most of the Polish immigrants were farmers, Polish coal miners from Pennsylvania moved to the town of Thurber in 1886 to work in the coal mines, and then moved to Strawn after the coal mines were closed.

Polish Texans celebrate the Christmas season from Christmas Eve to Three Kings Day on January 6. On Christmas Eve, also known as Wigilia or Wilia, the family gathers for a simple dinner when the first star appears in the sky. Depending on family preference, dinner usually consists of fried herring, sauteed salmon, or perch covered with an egg or olive sauce.

Good wishes are exchanged, and then an oplatek is shared before the meal is eaten. The ***oplatek*** is a wafer or flat piece of bread with a Christmas picture pressed into it which symbolizes love, friendship, and forgiveness. After the Christmas Eve meal, someone plays the part of the Star Man, or Santa Claus, who distributes gifts, then everyone attends ***Pasterka***, the Midnight Shepherd's Mass.

LESSON OBJECTIVES

- Identify food as the source of nutrients needed for growth, energy, and health.
- Define the term *nutrients.*

ASSESSMENT CRITERIA

Create a mural to depict the functions and food sources of six classes of nutrients.

Fine Arts **Grade 3**

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TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Make a copy of the teacher resource, "Nutrients." Cut into strips as directed on the resource page.

Explain to the class that there are invisible substances in food called ***nutrients*** that their bodies need to help them grow and have energy for work and play. Just as they need the oxygen in air, their bodies need the nutrients from food.

There are six classes of nutrients and each nutrient has a certain function. Nutrients are most effective when they are working with other nutrients. Lacking a nutrient is like missing a puzzle piece; the puzzle may stay together but you do not get a complete picture. Your body needs all of the puzzle pieces to stay healthy.

No single food contains all of the nutrients, so it is necessary to eat a variety of foods. Nutrients provide the framework for good health. Emphasize to the students that it is important to eat a variety of foods to maintain health and adequate growth.

Cut a large piece of newsprint or butcher paper into six puzzle pieces. Divide the class into six groups. Distribute a nutrient strip and a newsprint puzzle piece to each group. Give the following instructions to the groups:

1. Write the name of the nutrient in large letters on the puzzle piece.
2. Design a creative puzzle piece to illustrate the functions and food sources for that nutrient.
3. Ask each group to explain their puzzle piece, including the nutrient name, functions, and food sources.
4. Put the puzzle pieces together to make a mural.
5. Display the mural in the cafeteria for all of the students to enjoy.

RESOURCES & MATERIALS

Teacher resource: "Nutrients"

Supplies to design a puzzle:
Large piece of newsprint or butcher paper
Crayons
Markers

In advance, ask the cafeteria manager to display the completed mural in the cafeteria.

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, constructing and modeling three-dimensional forms, and manipulating fibers.

NUTRIENTS

The chart below names the six classes of nutrients, their functions, and foods that are good sources of the nutrient.

1. Cut the chart on the dotted lines to make six strips.
2. Distribute the strips to six groups of students.
3. Instruct each group of students to use the information on their strip to design a puzzle piece illustrating the nutrient functions and food sources. The six puzzle pieces will be put together to create a mural.

NUTRIENTS	***FUNCTION***	***FOOD SOURCES***
Proteins	• promotes building and repair of tissues	• meat, fish, poultry, eggs, dairy products, peanut butter
Fats	• supplies stored energy and transports some vitamins	• cream cheese, butter, margarine, salad oils, bacon
Carbohydrates	• supplies the main source of energy and bulk needed for digestion	• breads, cereals, rice, macaroni, fruits, potatoes
Vitamins	• promote clear skin, growth and good health, appetite and digestion, fight infection	• fruits and vegetables
Minerals	• necessary for building strong bones and teeth and carrying oxygen to cells	• dairy products and green leafy vegetables such as broccoli, turnip greens, spinach
Water	• a part of all tissues; needed for digestion, lubricating bones and joints, regulating body temperatures	• most foods and all beverages

Fine Arts **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices at snack time.

ASSESSMENT CRITERIA

Identify the importance of making wise food choices at snack time.

ACTIVITIES & STRATEGIES

Read aloud to the class the book, *Too Much Junk Food,* by Stan and Jan Berenstein.

Lead a class discussion by asking the following:
- What made Mama Bear aware that the cubs had been eating too much junk food?
- What did Mama Bear do with the junk food?
- Did Papa Bear want to give up the junk food? Why or why not?
- What happened to Papa Bear's pants?
- What foods would be healthier for the bears to snack on?
- What foods did the Bear family buy to replace the junk food?
- Why did Dr. Grizzly discourage the Bears from eating junk food?
- What else did Dr. Grizzly recommend the bears do to be healthy?
- What nutritious goodies did the Bears start eating?
- What was the result of the Bears' new health program?

Tell the students to draw some nutritious snacks they like to eat and activities they enjoy doing that provide exercise.

RESOURCES & MATERIALS

Too Much Junk Food by Stan and Jan Berenstein

Drawing paper
Markers or crayons

ESSENTIAL ELEMENT

Fine arts. Art. Inventive and imaginative expression through art materials and tools. The student shall be provided opportunities to express individual ideas, thoughts, and feelings in simple media including drawing, painting, printmaking, constructing and modeling three-dimensional forms, and manipulating fibers.

Health Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of breakfast.

ASSESSMENT CRITERIA

- Discuss the importance of breakfast.
- Name nutritious breakfast foods.

ACTIVITIES & STRATEGIES

Discuss the importance of breakfast.

Breakfast is the most important meal of the day. The term *breakfast* means to break the fast. When a person wakes up, the body has been without food for 10 to 12 hours.
Studies have proven that:
- People who skip breakfast do not perform as well in tasks of concentration as those who eat breakfast.
- People who skip breakfast have shorter attention spans.
- People who skip breakfast may feel drowsy by midmorning.
- People who skip breakfast score lower on tests than ones who eat breakfast.

It is unreasonable to expect the body to perform at its best when no fuel has been provided.

Any nutritious foods that students like may be eaten for breakfast such as cheese and crackers, ham sandwich, turkey sandwich, grilled cheese sandwich, beans, leftover casseroles or pizza. It is not necessary to eat only the traditional breakfast foods.

Ask students to name foods they enjoy eating for breakfast.

Give each student a blank piece of paper and tell them to write the letters of their names vertically with crayons or markers. Next to each letter in the name, tell students to write the name of a food beginning with that letter. Suggest that they write foods they enjoy eating for breakfast and draw each food named. Example:

Bagel
Oatmeal
Banana

Display the papers as the students finish.

RESOURCES & MATERIALS

Blank sheets of drawing paper
Crayons and/or colored markers

TEACHER TIPS

- **Remind students that breakfast is available to all students in the school cafeteria.**
- **If a student's name is a long name, let the student select the first five letters.**
- **Let students with short names suggest foods for those with longer names.**

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to make some food choices for self.

Health **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices using the daily food guide.

ASSESSMENT CRITERIA

- Name the food groups.
- Classify common food items according to each food group.

ACTIVITIES & STRATEGIES

Display a transparency of "Appendix C: A Pattern for Daily Food Choices."

- Read and discuss the different food groups with the students.
- Explain that a variety of foods eaten daily from each group is important to staying healthy.

Explain that the class is going to play a game, "Basic Food Group Scramble," in order to learn how to classify common foods.

- Label each corner and the center of the room as one of the five food groups listed in "Appendix C: A Pattern for Daily Food Choices."
- Distribute a food picture to each student.
- At the word *Go*, students walk quietly to the food group area of the room in which they think their picture belongs, and remain there until all students have found a food group.
- Tell students in each group to show their foods and determine if they are in the correct group.
- Collect the food pictures and repeat the game.

RESOURCES & MATERIALS

Transparency: "Appendix C: A Pattern for Daily Food Choices"

Food pictures from magazines or a set of the cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, IL 60018-4233
(708) 696-1860, Ext. 220

"Heart Explorers," American Heart Association Schoolsite Program, Grade 2

Five signs representing each of the food groups

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to make some food choices for self.

LESSON OBJECTIVES

- Make wise food choices as part of self-responsibility for health and wellness.
- Explore new foods in each food group.

ASSESSMENT CRITERIA

- Identify foods that make up a healthy lunch.
- Name healthy food choices that can be made in the school cafeteria.
- Rate personal food choices.

ACTIVITIES & STRATEGIES

Write the following four categories on the board:

- ✪✪✪✪ Most healthy lunch - GREEN
- ✪✪✪ Very healthy lunch - RED
- ✪✪ Fairly healthy lunch - BROWN
- ✪ Least healthy lunch - BLUE

Lead a discussion with the following:

- Healthy *protector foods* are low in fat and high in fiber.
- Healthy plant foods include fruits, vegetables, and grain foods and are both low in fat and high in fiber.
- Healthy animal foods are low in fat, and include fish, chicken, turkey, and low-fat dairy foods like milk, yogurt, and some cheeses. They contain no fiber.

Ask the students to take turns reading, "The Three Terrifics Eat Lunch" found on the worksheet, "Rate the Lunch Plate."

Review the main points of the story with the students.

- One can pick a variety of low-fat, high-fiber foods from the lunches in school.
- The school lunch counter is a good place to try new foods.

Ask the students if they have ever tried new foods for lunch at school? If so, which ones did they like best?

Distribute the worksheet, "Rate the Lunch Plate," to each student.

- Before they begin, review the components of a healthy lunch: a variety of fruits, vegetables, and grain foods, and low-fat animal foods like fish, chicken, turkey, and low-fat milk, yogurt, and cheese.
- Read the instructions with the students.
- Review the answers to the worksheet with the class.

Adapted from:
"Changing the Course: Lower Elementary Curriculum," American Cancer Society, p.113-118.

Health **Grade 3**

3

TEXAS EDUCATION AGENCY

RESOURCES & MATERIALS

Worksheet: "Rate the Lunch Plate"

"Changing the Course: Lower Elementary Curriculum," American Cancer Society

Crayons: green, red, brown, and blue

ANSWER KEY

- **Most healthy lunch = Plate No.3 - GREEN**
  It served the best variety of low-fat, high-fiber foods including chicken, peas, rice, tossed salad, and an orange.
- **Very healthy lunch = Plate No.1 - RED**
  It included whole-grain bread, coleslaw, grapes, and tuna.
- **Fairly healthy lunch = Plate No.2 - BROWN**
  It included whole-grain bread and carrot sticks.
- **Least healthy lunch = Plate No.4 - BLUE**
  It did not include any low-fat, high-fiber foods.

Encourage the students to try two or three new foods in the school cafeteria this week.

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to make some food choices for self.

NAME ______________________________ **DATE** ______________

Rate the Lunch Plate

Story: *The Three Terrifics Eat Lunch*

The third grade headed for the cafeteria for lunch. Tom, Rosa, and Vanessa were standing in line with their friends, Billy and Lee.

Billy made a face. "It's all yucky. I'm just going to get a couple of bags of potato chips and some chocolate pudding. That's what I always eat for lunch."

Tom said "I'm going to get a sandwich, and some milk, and some carrot sticks, and an apple, and one of those big cookies for dessert."

The Three Terrifics were eager to share some of their eating adventures with Billy and Lee. Rosa said, "You know how the three of us sometimes do things together on Saturdays? Well, one day Vanessa's mom showed us how to make the best oatmeal cookies in the world."

Tom nodded. "And the tacos we had at Rosa's house, and the super salad my dad made with 17 vegetables in it were great!"

Then Vanessa added, "We used to think the only important thing was how it tasted, but now we know it ought to be good for you too. Not that we don't eat chips and cake and candy sometimes, we just eat more of the healthy foods and less of the others."

Billy made another face. "I know all that stuff about healthy food. But some things that are good for you taste awful. I don't care, I'm going to keep eating the things I like."

Rosa said, "How do you know what things you like or don't like if all you ever eat is potato chips and chocolate pudding? Maybe you'd be surprised if you gave yourself a chance and tried something different once in a while."

"That's true." Lee admitted. But I don't know which foods are healthy and which ones aren't." She turned to the Three Terrifics and said, "How did you ever find out about healthy food and start tasting new things?"

Tom spoke. "Why don't we get together tomorrow at one of our houses and have a cooking and tasting party? I bet you'll find some new foods you love to eat, and we'll teach you what we've learned."

Lee and Billy looked really happy. Billy said, "Then maybe next time our lunch trays will be as full of different foods as yours."

Directions: Look over the four lunches below and rate them according to the stars and colors in the shaded box. Draw and color in the boxes the number of stars you think each plate deserves.

✪✪✪✪ Most healthy lunch - GREEN
✪✪✪ Very healthy lunch - RED
✪✪ Fairly healthy lunch - BROWN
✪ Least healthy lunch - BLUE

Plate No. 1
Tuna sandwich on whole wheat bread
Coleslaw
Grapes

Plate No. 2
Bologna sandwich on whole wheat bread
Potato chips
Carrot sticks

Plate No. 3
Chicken without skin
Peas
Rice
Bowl of tossed salad
Orange

Plate No. 4
Hot dog
Swiss cheese
Bowl of ice cream

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

Language Arts Grade 3

3

TEXAS EDUCATION AGENCY

ASSESSMENT CRITERIA

- Name vitamin A as an essential nutrient.
- Identify the food sources and functions of vitamin A.

ACTIVITIES & STRATEGIES

Explain that vitamin A, scientifically known as ***carotene***, is one of the vitamins that is essential to the body.

- It forms and maintains healthy skin, hair, and mucous membranes (inner body linings).
- It is necessary to the development of bones and teeth.
- It is added to low-fat and skim milk.
- It aids vision at night or in dim light such as a movie theater.

Focus on sources of vitamin A in plant foods.

- A good rule of thumb: the darker, the better.
  - ° dark green leafy vegetables
  - ° dark orange vegetables
  - ° orange fruits, excluding citrus
- Since vitamin A is stored in the liver, excess vitamin A is harmful.

List the food sources of vitamin A on the chalkboard. Some of these foods include:

greens
broccoli
egg
milk
apricots
liver
carrots
squash
spinach
sweet potatoes
yams
cantaloupe

Write a story about one or more of the vitamin A food sources.

RESOURCES & MATERIALS

ESSENTIAL ELEMENTS

Language arts. Reading. Using comprehension skills to gain meaning from whatever is read. The student shall be provided opportunities to distinguish between fact and nonfact including opinion.
Language arts. Writing. Using a variety of techniques to select topics and to generate material to write about those topics. The student shall be provided opportunities to use a variety of prewriting activities as sources for later writing; and stay on the topic.

Language Arts Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Make wise food choices as part of self-responsibility for health and wellness.

ASSESSMENT CRITERIA

- Identify fiber as a necessary part of the diet.
- Discuss the importance of fiber in staying healthy.
- Appraise taste, textures, and names of fiber-rich foods.

ACTIVITIES & STRATEGIES

Ask students the following questions:
- What is fiber?
- What foods are high in fiber?
- Why is it important for fiber to be included in the daily diet?

Distribute the worksheet, "Fiber Fun Test," and tell the students that it will help them understand the answers to the above questions.

Allow time for students to answer the questions on the worksheet, and then discuss the worksheet information about fiber. Ask the students about changes they might make in their food choices.

Conduct a tasting party with the high-fiber food samples to let the students realize that eating fiber can be tasty and fun!

Before the tasting party, ask students if any of them have food allergies in order to avoid choosing foods they should not eat. A note home to the parent prior to the tasting party is a safety measure.

As a follow-up, ask students to:
- Answer the questions on the worksheet again after the tasting party.
- Make suggestions for increasing fiber in the breakfast and lunch meals in the cafeteria.

RESOURCES & MATERIALS

Worksheet: "Fiber Fun Test"

"Changing the Course: Lower Elementary Curriculum," American Cancer Society

Containers for each food item to be tasted
High-fiber food samples for the tasting party:
popcorn, raisins, bite-size pieces of whole-grain bread, whole-grain cereal, whole-wheat crackers, apple, banana, orange, broccoli, cauliflower, carrot and celery sticks, other fruits and vegetables

TEACHER TIP

Include a note to parents a few days before the party:

Parents:
The class will be having a "fiber tasting party" on ______. Please list any foods that your child should not eat.

________________ ***Signature***

In advance, ask the cafeteria manager to talk with the students about increasing fiber in the cafeteria meals.

ESSENTIAL ELEMENTS

Language arts. Reading. Developing vocabulary to understand written material. The student shall be provided opportunitiesto acquire a reading vocabulary relating to concepts being learned.
Language arts. Reading. Using comprehension skills to gain meaning from whatever is read. The student shall be provided opportunities to recall important facts and details that support the main idea.

NAME ______________________________ DATE ______________

Fiber Fun Test

Mark an X in the box beside the things you have eaten today.

☐ Have you eaten a raw vegetable today?
☐ Have you eaten whole-grain cereal today?
☐ Have you eaten fresh fruit today?
☐ Have you eaten whole-grain bread today?

Rating Scale:

- If you have an ✘ in four boxes—yippee!! You're **fiberific** today!
- If you have an ✘ in three boxes—You've had adequate fiber today.
- If you have an ✘ in one or two boxes—You've had a good start with fiber today.

What is fiber, anyway?—

Fiber is plant material that the body cannot break down during digestion.

- Picture a sponge inside of your stomach, soaking up water and making you feel full. **Fiber** acts much like a sponge inside your body.
- Scientists in cancer research have found that eating enough **fiber** may help some people protect their bodies from some types of cancer.
- **Fiber** helps our bodies move food through our digestive tracts. It helps keep our calorie intake low for weight control, and it may help prevent other diseases some people develop when they are older.
- It is a smart idea to eat fresh fruits, vegetables, and whole-grain cereals and bread. These foods give your body plenty of **fiber, energy, vitamins, and minerals** which are all needed to keep you healthy and well. These foods are also usually low in fat, salt, and sugar which are not good for your body in large amounts .

After the tasting party, take the "Fiber Fun Test" again.

Language Arts Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Classify foods using a food grouping system.

ASSESSMENT CRITERIA

- Categorize the school lunch menu according to each group.
- Organize food pictures into the correct food groups.

ACTIVITIES & STRATEGIES

Prior to class, make a chart on newsprint with six wide columns using the food groups as shown in "Appendix C: A Pattern for Daily Food Choices" for five of the column headings. The sixth heading is *Other* and includes foods with little or no nutritive value such as jelly, mustard, catsup, mayonnaise, chips, soft drinks, cookies, cakes, and doughnuts.

Direct the students' attention to the chart, and select a student to read the column headings. Ask different students to read and classify the food items on the school lunch menu. As each food is classified, write it in the corresponding category on the chart. Use "Appendix C: A Pattern for Daily Food Choices" as a guide for directing the students.

Point out that the school serves a variety of foods from each of the food groups. Explain that it is important to eat a variety of foods from all groups except the *Other* group. Foods from the *Other* group should be eaten only in limited quantities and should not replace more nutritious foods.

Divide the class into six groups. Assign one of the food groups to each group. Tell students in each group to cut out pictures of foods from magazines and grocery store ads that represent their food group.

Ask each group to identify their pictures, and glue them in the appropriate column. If the group has a picture of a food that belongs in a different food group, ask the other student groups to identify the correct food group.

Summarize the lesson by explaining that, in order to maintain good health, people need a variety of foods. Avoid eating too many foods from the *Other* group because they are usually high in calories and fat and low in nutritive value.

RESOURCES & MATERIALS

"Appendix C: A Pattern for Daily Food Choices"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 3

One week of the school lunch menu
Newsprint
Magazines
Grocery store advertisements
Glue
Scissors

- **In advance, invite the cafeteria manager to direct the students in classifying the school lunch menus and to explain how they plan the menus.**
- **Ask the manager to emphasize the importance of eating a variety of foods except ones high in fat and sugar which are commonly found in the *Other* group.**

ESSENTIAL ELEMENT

Language arts. Reading. Developing vocabulary to understand written material. The student shall be provided opportunities to understand the meaning of words in context.

Language Arts Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss family food preferences.

ASSESSMENT CRITERIA

- Dictate recipe ideas and explanations.
- Make a cookbook of family recipes to take home.

ACTIVITIES & STRATEGIES

Prior to this activity, send the worksheet, "Our Favorite Family Recipes," home and ask the family to help the student complete it. Leave the bottom of the sheet empty.

Instruct the students to draw a picture of the recipe's finished product.

Ask each student to share his or her recipe with the class and tell why he or she and the family members like this dish.

Duplicate each finished worksheet and help the students put the recipes together between construction paper covers. Bind the cookbooks by lacing yarn through punched holes.

Tell the students to name their cookbook or use one of these titles: *Cook and Learn, Adventures in Cooking, Love at First Bite, Cool Cooking,* or *Cooking is Fun.*

The cookbooks may be taken home to share with their families.

RESOURCES & MATERIALS

Worksheet: "Our Favorite Family Recipe"

Children's Help Your Heart Cookbook, American Heart Association

Crayons
Construction paper
Hole punch
Yarn

TEACHER TIP

You may want to assign a specific category of recipes such as salad, bread, meat dish, and chicken dish to each student.

ESSENTIAL ELEMENT

Language arts. Speaking. Developing fluency in using oral language to communicate effectively. The student shall be provided opportunities to use visual aids in making oral presentations.

NAME ________________________ **DATE** ____________

Our Favorite Family Recipe:

____

From the home of: ____________________

Ingredients and amounts: ____________________

How to prepare: ____________________

How long to cook:

Number of servings:

Serving instructions:

Language Arts Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Identify basic nutrition information on food labels.
- Discuss wise consumer food-buying skills.

ASSESSMENT CRITERIA

Identify basic information on food labels.

ACTIVITIES & STRATEGIES

Display several cans with the labels covered. Lead a class discussion about the importance of food labeling. Use these questions to begin the discussion:
- What is in the cans?
- How do we usually know what is in the cans?
- What other information do you find on the food label?

Use the transparency, "Getting to Know Food Labels," to emphasize that food labels show the ingredients and other information in packages.

The following information is required by the United States Food and Drug Administration (FDA) for all products:
- the common product name and its form
- the net weight of the contents, including liquid
- the manufacturer, packer, or distributor's name and address

Additional required food labeling information includes:
- ingredients for most products
- nutrition information if:
  - nutrients are added to fortify or enrich a product
  - a nutritional claim is made such as *low-calorie, low-fat, cholesterol-free*, or *no preservatives added*
- UPC (Universal Product Code)

Explain that ingredients are listed by weight with the heaviest listed first, second heaviest next, and so on.

Distribute copies of the worksheet, "Label Logic," and read instructions to the students. Allow time for completion, then review the answers with the class.

RESOURCES & MATERIALS

Transparency: "Getting To Know Food Labels"

Worksheet: "Label Logic"

Overhead projector
Sample labels

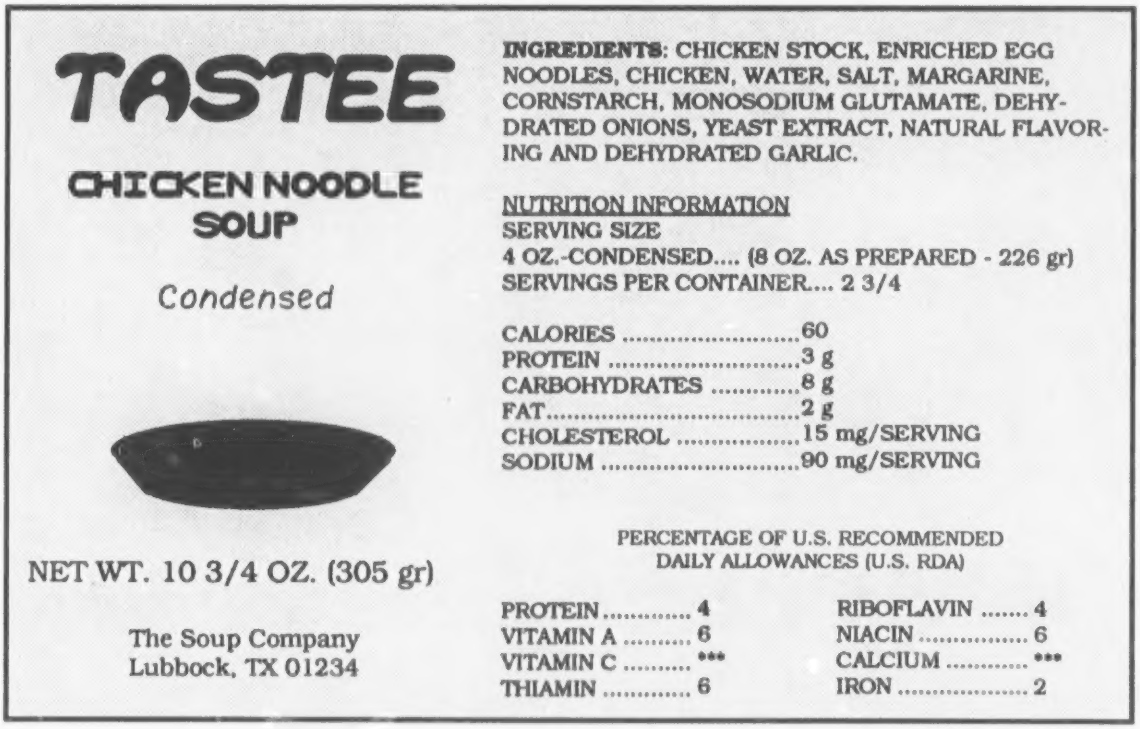
TEACHER TIP
Ask the students to bring empty cereal boxes or labels from other food products.

In advance, ask the cafeteria manager to bring labels to class from food products used in the cafeteria.

ESSENTIAL ELEMENT

Language arts. Applying reading skills to a variety of practical situations. The student shall be provided opportunities to use graphic sources for information: simple maps, globes, pictures, diagrams, and bar graphs.

Getting to Know Food Labels



TASTEE

CHICKEN NOODLE SOUP

Condensed

NET WT. 10 3/4 OZ. (305 gr)

The Soup Company
Lubbock, TX 01234

INGREDIENTS: CHICKEN STOCK, ENRICHED EGG NOODLES, CHICKEN, WATER, SALT, MARGARINE, CORNSTARCH, MONOSODIUM GLUTAMATE, DEHYDRATED ONIONS, YEAST EXTRACT, NATURAL FLAVORING AND DEHYDRATED GARLIC.

NUTRITION INFORMATION
SERVING SIZE
4 OZ.-CONDENSED.... (8 OZ. AS PREPARED - 226 gr)
SERVINGS PER CONTAINER.... 2 3/4

CALORIES	60
PROTEIN	3 g
CARBOHYDRATES	8 g
FAT	2 g
CHOLESTEROL	15 mg/SERVING
SODIUM	90 mg/SERVING

PERCENTAGE OF U.S. RECOMMENDED DAILY ALLOWANCES (U.S. RDA)

PROTEIN	4	RIBOFLAVIN	4
VITAMIN A	6	NIACIN	6
VITAMIN C	***	CALCIUM	***
THIAMIN	6	IRON	2

Information **required** on all food labels:

- the common product name and its form
- the net weight of the contents, including water or juice
- the manufacturer, packer, or distributor's name and address

Additional food label information which might be seen on a food label:

- **Ingredients** (required for most products)
- **Nutrition information:**
  - if nutrients are added to fortify or enrich a product
  - if a nutritional claim is made such as *low-calorie, low-fat, cholesterol-free,* or *no preservatives added*
- **UPC** (Universal Product Code)

Many manufacturers voluntarily include nutrition information even when it is not required.

NAME ______________________________ **DATE** ________________

Label Logic

AN ENRICHED MACARONI PRODUCT

Elbo-Roni

NO CHOLESTEROL & NATURALLY SODIUM FREE
NET WT. 12 OZ. (340g)

NUTRITION INFORMATION PER SERVING

SERVING SIZE	2 OZ. (DRY WEIGHT)
SERVINGS PER CONTAINER	6
CALORIES	210
PROTEIN	7 GRAMS
CARBOHYDRATES	42 GRAMS
FAT	1 GRAM
CHOLESTEROL	0 MILLIGRAMS**
SODIUM	0 MILLIGRAMS***

PERCENTAGE OF U.S. RECOMMENDED DAILY ALLOWANCES (U.S. RDA)

PROTEIN	10
VITAMIN A	*
VITAMIN C	*
THIAMIN	30
RIBOFLAVIN	10
NIACIN	15
CALCIUM	*
IRON	10

INGREDIENTS: SEMOLINA; DURUM FLOUR; NIACIN; IRON (FERROUS SULFATE); THIAMIN MONONITRATE; RIBOFLAVIN.

Mfd. by *LITTLE ITALY*
Pasta, NY 12345-6789

Using the label provided above, answer the following questions:

1. What is the name of the product?
2. What is the net weight?
3. What is the name of the manufacturer, packer, or distributor?
4. How many servings in the container?
5. What is the serving size?
6. What ingredient is listed first?
7. What ingredient is listed last?
8. How many calories per serving?
9. How many grams of protein per serving?
10. Is the nutrition information on this product required or is it voluntary? Why?

ESR IV: Nutrition Education

Mathematics **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Define the term *nutrients*.

ASSESSMENT CRITERIA

Identify the basic function of each nutrient.

ACTIVITIES & STRATEGIES

Introduce the lesson by asking the following questions:
- What do you breathe?
- Instruct the students to slowly take in a deep breath through their noses and gently blow the air out through their mouths. Then, ask them if they are able to see the air they are breathing?
- Why do we need air?

Explain to the students that there are invisible substances in food, called *nutrients*. We need nutrients just like we need invisible air. Just as you need the oxygen in air, your body needs the nutrients from food to grow, maintain good health, and have energy for work and play.

Make a transparency of the teacher resource, "Nutrients." Present the information given below and on the teacher resource "Nutrients," then define the term ***nutrients***. Explain their functions and name food sources of each nutrient.

There are six classes of nutrients, and each nutrient has a certain function. Most nutrients are most effective when they are working with other nutrients. No single food contains all of the nutrients so it is important to eat a variety of foods. Nutrients are like building blocks; they provide the framework for a healthy body.

Distribute the worksheet, "Nutrients: The Building Blocks of Health." After the students have completed the worksheet, review the multiplied answers and the nutrients. Ask students to name the functions and food sources of each nutrient.

Remind students that carbohydrates, not fats are the body's primary source of energy; fat intake needs to be limited. Excess fat has been linked to many health problems such as heart disease, diabetes, and cancer.

RESOURCES & MATERIALS

Worksheet: "Nutrients: The Building Blocks of Health"

Transparency: "Nutrients"

Overhead projector

ANSWER KEY

Top: 4, 20, 6, 10, 8, 24, 9, 25,10, 27,
12, 28, 14, 30, 15, 32, 16, 36, 18, 35

1. Proteins
2. Fats
3. Carbohydrates
4. Vitamins
5. Minerals
6. Water

ESSENTIAL ELEMENT

Mathematics. Operations and computation. Use of manipulatives to develop the concepts of basic operations on numbers and to apply these concepts to the computational algorithms. The student shall be provided opportunities to explore multiplication and division using a variety of different models, and use patterns from explorations and properties of whole numbers to generate multiplication facts.

NAME ______________________________ DATE ______________

NUTRIENTS: THE BUILDING BLOCKS OF HEALTH

Solve these multiplication problems. Use the correct answers to find the names of the building blocks of health in numbers 1-6. Example: **2 X 2 = 4, A = 4**

A	B	C	D	E	F	H	I	L	M
2	4	2	3	2	4	3	5	5	3
× 2	× 5	× 3	× 7	× 4	× 6	× 3	× 5	× 2	× 9
4									

N	O	P	R	S	T	U	V	W	Y
3	4	2	5	3	4	4	4	3	7
× 4	× 7	× 7	× 6	× 5	× 8	× 4	× 9	× 6	× 5

1. These nutrients promote the building and repair of tissues.

☐	☐	☐	☐	☐	☐	☐	☐
14	30	28	32	8	25	12	15

2. These nutrients supply stored energy and transport some vitamins.

☐	A	☐	☐
24	4	32	15

3. These nutrients supply the main source of energy and bulk needed for digestion.

☐	A	☐	☐	☐	☐	☐	☐	☐	A	☐	☐	☐
6	4	30	20	28	9	35	21	30	4	32	8	15

4. These nutrients promote clear skin, growth and digestion, and fight infection.

☐	☐	☐	A	☐	☐	☐	☐
36	25	32	4	27	25	12	15

5. These nutrients are necessary for building strong bones and teeth.

☐	☐	☐	☐	☐	A	☐	☐
27	25	12	8	30	4	10	15

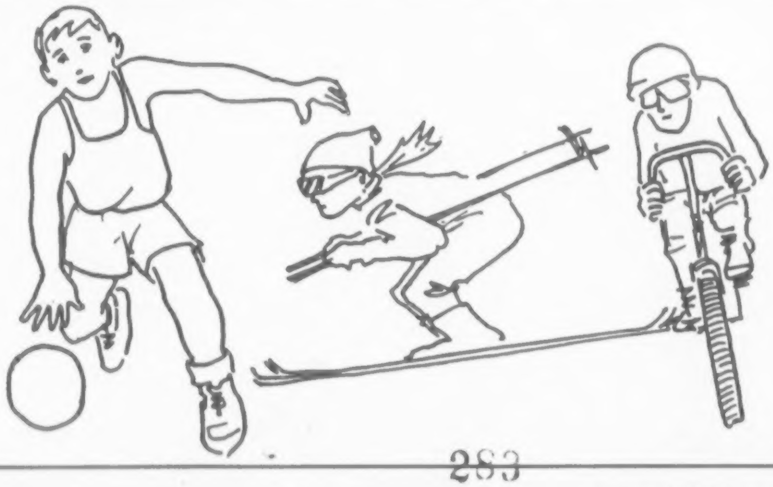
6. This nutrient is a part of all tissues and helps to regulate body temperatures.

☐	A	☐	☐	☐
18	4	32	8	30

NAME ______________________________ DATE ____________________

NUTRIENTS

NUTRIENTS	FUNCTION	FOOD SOURCES
Proteins	• Promote building and repair of tissues	• Meat, fish, poultry, eggs, dairy products, peanut butter
Fats	• Supply energy and transports some vitamins	• Cream cheese, butter, margarine, salad oils, bacon
Carbohydrates	• Supply energy and bulk needed for digestion	• Breads, cereals, rice, macaroni, fruits, potatoes
Vitamins	• Promote clear skin, growth, good health, appetite, digestion, and fights infection	• Fruits and vegetables
Minerals	• Necessary for building strong bones and teeth and carrying oxygen to cells	• Dairy products & green leafy vegetables like broccoli, turnip greens, spinach
Water	• A part of all tissues; needed for digestion, lubricating bones and joints, and regulating body temperatures	• Most foods and all beverages



LESSON OBJECTIVES

- Explain the importance of breakfast.
- Select nutritionally balanced meals each day.

ASSESSMENT CRITERIA

Compare time units between breakfast, lunch, and dinner meals.

Mathematics **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Using a large clock, help the students count the number of hours between an evening meal at 6:00 p.m. and a morning meal at 7:00 a.m. Show thirteen blocks to illustrate the concept *thirteen*. Point to each number on the clock and/or block as the students count orally.

Count the number of hours between breakfast around 7:00 a.m. and the scheduled lunch time for your students. Show blocks to illustrate the number of hours.

Count the number of hours between school lunch time and the dinner meal around 6:00 p.m. Show blocks to illustrate the number of hours. Point to each number on the clock and/or block as the students count orally.

Compare the time units. Emphasize that the longest number of hours is the time between dinner and breakfast. Establish that breakfast is not only important for good health, but is also important to help a person perform better at school. It is important to start the day with a good breakfast.

Distribute three copies of the worksheet, "Around the Clock With ____________________ (name of the student)" to each student. Use construction paper for the front and back covers. Help the students staple the book together (front cover, three pages, back cover).

Tell the students to color the hands on the face of the clocks for breakfast at around 7:00 a.m., their scheduled school lunch time, and dinner around 6:00 p.m.

Tell the students to take their books home and show them to their families.

RESOURCES & MATERIALS

Worksheet: "Eating Around the Clock with ________________"

Early Bird materials, NET Library

Large clock
Blocks
Construction paper
Stapler
Paper
Pencils
Crayons

In advance, ask the cafeteria manager to discuss the breakfast program with the students. Stress that the school breakfast is for all students.

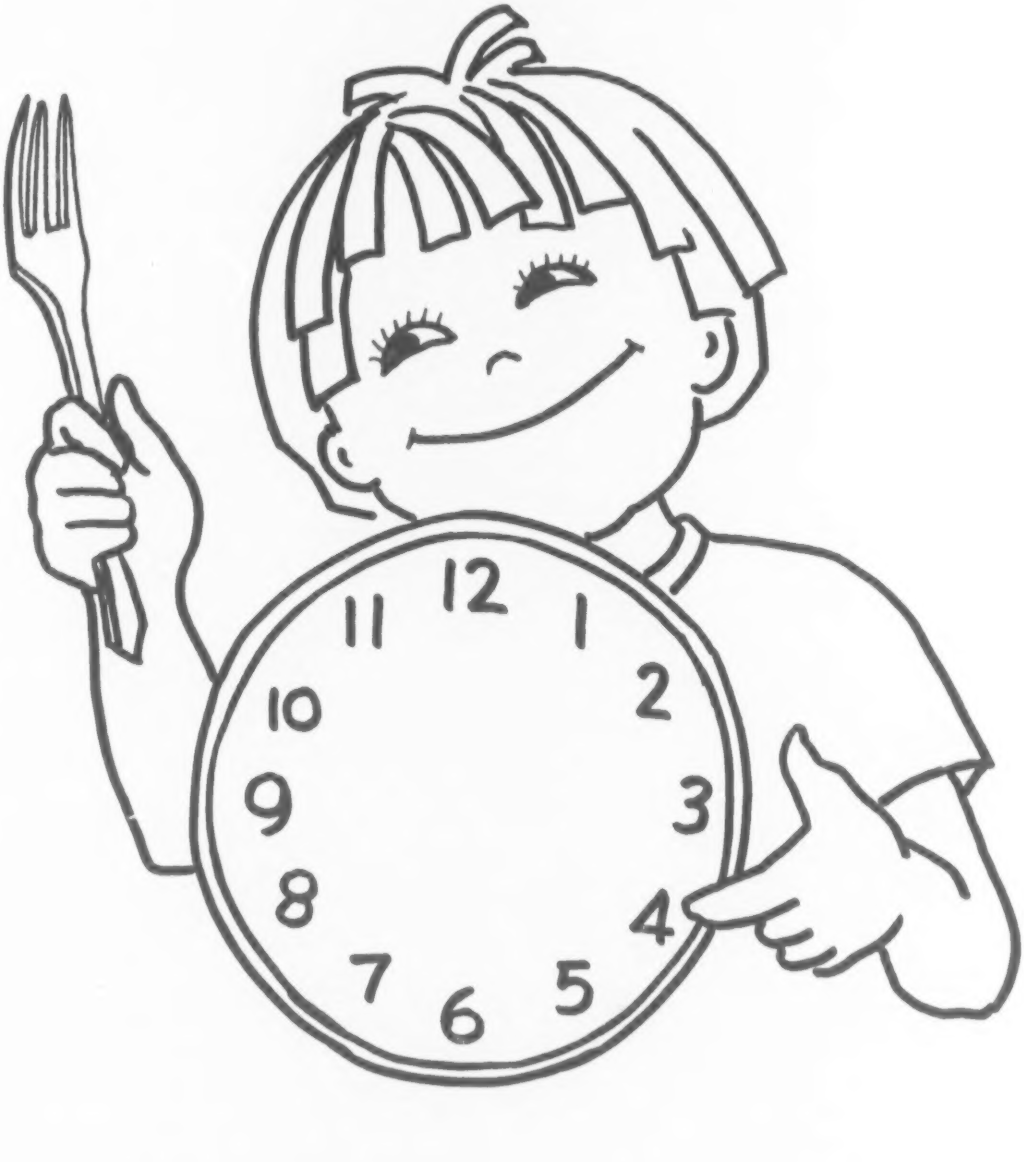
ESSENTIAL ELEMENT

Mathematics. Measurement. Concepts and skills using metric and customary units. The student shall be provided opportunities to estimate answers and solve application and nonroutine problems involving length, weight, and time.

NAME ________________________________ DATE ________________

Eating Around the Clock With

____


12
1
2
3
4
5
6
7
8
9
10
11

TEXAS EDUCATION AGENCY ESR IV

Mathematics **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss nutritional needs of eight and nine year olds.

ASSESSMENT CRITERIA

- Identify problems with the overuse of salt in the diet.
- Name foods with a high salt content.

ACTIVITIES & STRATEGIES

Explain that salt contains a mineral called sodium.
- It is a mineral that may lead to high blood pressure for some people.
- A lifetime of eating high-sodium foods may cause heart disease, strokes, or kidney problems.

Let the students measure out one teaspoon of salt on a piece of dark construction paper.

Tell the students that children under twelve years of age should not eat more than one teaspoon of salt each day.

Explain that all foods contain salt.
- Fruits, vegetables, dairy products, and fresh meats are very low in salt or sodium.
- ***Processed foods*** (Appendix G: Glossary of Terms) have a high amount of salt and much more than anyone needs. These foods may not look or taste salty.

Write these examples of processed foods on the board:
(Amounts are approximate.)
- 6 oz. tomato juice—1/4 teaspoon salt
- 3 pancakes—1/3 teaspoon salt
- 1 double meat cheeseburger—1/2 teaspoon salt
- 1 oz. American cheese—1/4 teaspoon salt
- 1 slice of apple pie—1/8 teaspoon salt
- 1 oz. bag potato chips—1/8 teaspoon salt
- 2 Tblsp. catsup—1/8 teaspoon salt

Let the students measure out the amounts of salt in each of the foods listed on the chalkboard. Point out that all of these foods, and more, could be consumed in one day.
Ask how these measured amounts on their paper compare with the amounts recommended for their age group.

Lead a class discussion on ways to limit a salty diet and substitute fresh fruit for snacks instead of processed foods.

RESOURCES & MATERIALS

"Appendix G: Glossary of Terms"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 3

Poster: "A Case of the Hidden Sodium," American Cancer Society

Measuring spoons for each student, if possible
Pieces of dark construction paper
Salt

ESSENTIAL ELEMENT

Mathematics. Measurement concepts and skills using metric and customary units. The student shall be provided opportunities to measure (using measuring instruments).

LESSON OBJECTIVES

- Identify basic nutrition information on food labels.
- Discuss wise consumer food-buying skills.

ASSESSMENT CRITERIA

Identify the main ingredients of a food product from the ingredient listing on the package.

Mathematics **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Using a can of soup or a box of cereal, lead a class discussion on ingredient listings by asking the following or similar questions:
- What ingredients are used to make this product?
- How could you find out what ingredients are used to make this product?

Point out the ingredient listing on a food label. Explain that most packaged foods are required by law to list the ingredients. The ingredients are listed by weight with the heaviest listed first. Select a student to read the ingredient list on the soup can or cereal box, and ask the class to answer the following questions:
- What is the main ingredient in this food? (The ingredient listed first.)
- What ingredient is listed last? (The ingredient that weighs the least.)
- What would it mean if sugar was listed first on a cereal label? (It is present in the largest amount.)

Ask the students to complete the worksheet, "What Is In My Cereal?" Review and discuss the answers with the class.

Explain how to measure dry and liquid materials, and ask several students to measure the ingredients for muffins:
- 2 cups (500 mL) all purpose flour
- 3 tablespoons (45 mL) sugar
- 1/2 teaspoon (3 mL) salt
- 1 tablespoon (15 mL) baking powder
- 1 egg, beaten
- 1 cup (250 mL) milk
- 1/4 cup (62.5 mL) cooking oil

Write the name and amount of the ingredient on a card and place it next to each ingredient. Ask the students to put the ingredients in order as they would appear on a box of muffin mix.

Ask the students to complete the worksheet, "Name the Main Ingredient." Review and discuss the answers with the class.

RESOURCES & MATERIALS

Worksheet: "What Is In My Cereal?"

Worksheet: "Name the Main Ingredient"

Empty soup cans or cereal boxes (contributed by students)

Measuring cups and spoons

Assorted boxes of cereal (students may be asked to bring empty cereal boxes)

Ingredients for muffins (listed in opposite column)

Answer Key to "What Is In My Cereal?"

The answers to questions #3 & 4 will be determined by the cereals selected by students in #1.
2. It is the ingredient present in the largest amount.

Answer Key to "Name the Main Ingredient"

1. No **3. Salt**
2. Milk **4. Milk, sugar, egg, cornstarch, margarine, vanilla, salt**

Teacher Tip

The activity could be expanded by making the muffins for the students to eat.

In advance, check with the cafeteria manager to see if the class could do the measuring in the cafeteria.

ESSENTIAL ELEMENT

Mathematics. Measurement concepts and skills using metric and customary units. The student shall be provided opportunities to solve problems using metric and customary unit measures (no conversion).

NAME ______________________________ DATE ________________

What Is In My Cereal?

Find the ingredient listing on each of the cereal boxes. Use this information to answer the following questions.

1. Write the names of six cereals on the lines below. List in order the first three ingredients of each of the cereals.

Cereal Name	Ingredient 1	Ingredient 2	Ingredient 3

2. What is the importance of knowing which ingredient is listed first?

____

3. From the cereals listed above, how many had some form of sugar in the top three ingredients?

____

4. Name the cereal you think would be the most nutritious for you to eat?

____

5. Why?

____

____

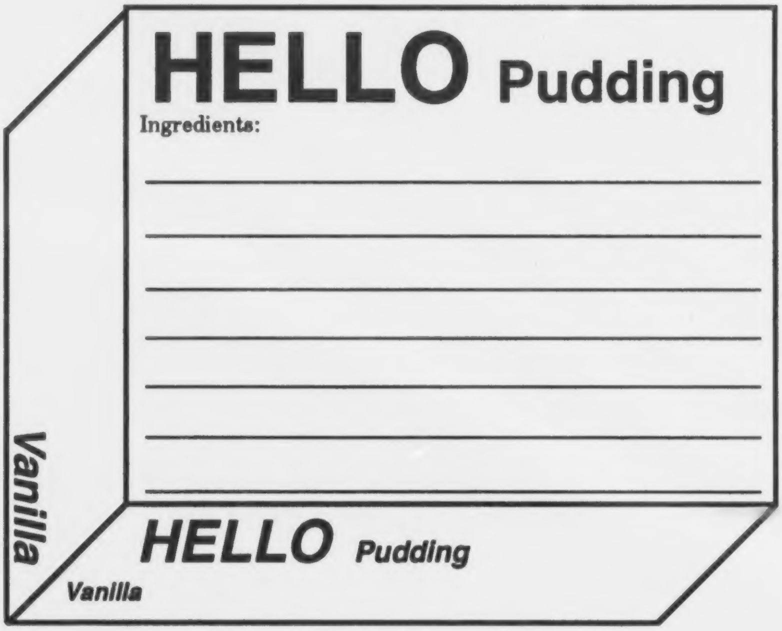
NAME ______________________ **DATE** ______________

Name the Main Ingredient

Following is an ingredient list of vanilla pudding. Read it and answer the questions.

3 1/2 tablespoons (48 mL) cornstarch
1/2 cup (125 mL) sugar
dash salt
2 cups (500 mL) milk
1 egg
1 tablespoon (15 mL) butter or margarine
1 teaspoon (5 mL) vanilla

1. Are all of the ingredient amounts the same? ______________________
2. If not, which ingredient is there the most of? ______________________
3. Which ingredient is there the least amount of? ______________________
4. On the box below, list the ingredients in order as they would appear on food product ingredient listing. Remember, it is not necessary to include the amount of each ingredient.



LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

Recognize how food supplies nutrients to the body.

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Identify the body as a busy machine.
- It works day and night when a student is sitting, standing, walking, running, studying, and even standing still.
- The body depends on the student to eat nutritious foods to supply fuel and to give it proper rest and exercise.

What happens when a person eats?

Show the digestion poster, "What Happens When We Eat?" and use the teaching aids to demonstrate:
- Tongue: It identifies bitter, sour, salty, and sweet tastes.
- Teeth: Show the teeth model. The teeth chew the food.
- Esophagus: Show a plastic tube and ball, and demonstrate how the esophagus pushes food to the stomach.
- Stomach: Explain that it is like a balloon. It can be large or small; demonstrate by blowing up a balloon.
- Small intestine: Explain that it is 20 feet long. Tell two students to open the 20 foot rope to demonstrate the length. Digestion continues when useful nutrients are carried through the cells in the body by the bloodstream. What the body does not use is excreted by the large intestine.

Students get about 50 nutrients from their food. The nutrients are needed for growth and health. Nutrients give students the strength for work and play.

Tell the students to write a paragraph on something interesting that they have learned about digestion.

RESOURCES & MATERIALS

A Poster size picture of "What Happens When We Eat?"

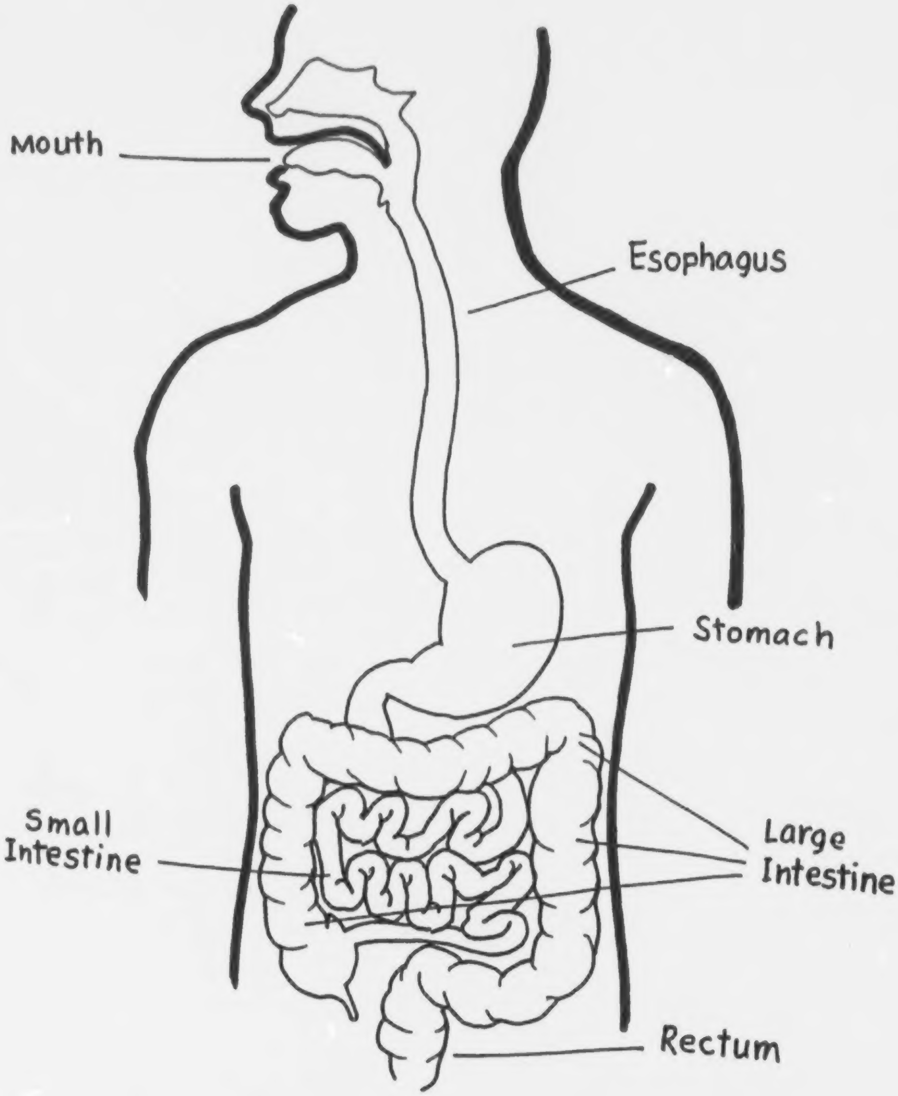
"Healthwise: The Stomach Story," Video #317, NET Library

20 foot rope
Balloon
Teeth model
Small food model
Plastic tube and ball (esophagus)

ESSENTIAL ELEMENT

Science. Relate objects and events to other objects and events. The student shall be provided opportunities to relate classroom objects, science principles, and activities to daily life.

What Happens When We Eat?


Mouth
Esophagus
Stomach
Small Intestine
Large Intestine
Rectum

- After a bite of food disappears into your mouth, you taste it with your tongue, chew it with your teeth to break it up, and swallow it down your esophagus.
- It travels down the esophagus, then the food goes through the stomach, and into the small intestine where the major part of digestion takes place.
- Food is broken down into nutrients small enough to be absorbed through the wall of the small intestine and into the bloodstream.
- The bloodstream carries the nutrients to all parts of the body so that your body gets the energy to work and play.

LESSON OBJECTIVE

Identify food as the source of nutrients needed for growth, energy, and health.

ASSESSMENT CRITERIA

- Explain the importance of nutrients for body growth.
- Define the term *nutrients.*

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain that all living things require nutrients.

Define the term *nutrients. **Nutrients*** are life-sustaining chemical substances that nourish and promote the growth of the human body.

Ask students what might happen if living things are deprived of nutrients.

Ask students to identify foods or food groups that help them grow strong and healthy.

Explain that the human body is composed of building blocks called *cells.* Illustrate this with toy blocks.

As growth occurs, the cells of the body multiply. An adult has billions of cells more than a child.

Observe human cells:
1. Scrape the inside of a volunteer's cheek with a toothpick to remove cheek epithelial cells.
2. Place the saliva and cells on a microscope slide, cover with a cover slip, and put a drop of iodine on the corner of the cover slip.
3. Place the slide under the microscope and allow the students to observe the cells.

Distribute the worksheet, "Cheek Cells." Tell the students to draw on the worksheet what they observed under the microscope. After they have finished drawing their observations of cells, ask some of the students to describe their observations to the class.

RESOURCES & MATERIALS

Worksheet: "Cheek Cells"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 3

Microscope
Slides
Cover slips
Toothpicks
Iodine
Toy blocks

TEACHER TIP

****CAUTION**** **Iodine is poisonous; ingestion may be fatal.**

ESSENTIAL ELEMENT

Science. Experience in oral and written communication of data in appropriate form. The student shall be provided opportunities to obtain science information from varied resources.

NAME ______________________________ **DATE** ________________

CHEEK CELLS

Directions:
Draw and color pictures of the cheek cells that you have observed under the microscope.

LESSON OBJECTIVE

Explain the functions of the nutrients.

ASSESSMENT CRITERIA

Demonstrate the effects of calcium deficiency.

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Minerals are necessary for building bone tissue and regulating body processes. The most abundant mineral in the body is calcium.

Ask students to describe the color and texture of human bone tissue.

Pass around samples of limestone or caliche and samples of bone tissue. Ask the students to compare them. Explain that both are composed mainly of calcium.

Write the definition of *calcium* on the chalkboard. ***Calcium*** is a mineral that helps bones and teeth grow strong and healthy. Ask students to give some sources of calcium. (See some of the sources of calcium in the Teacher Tip.)

Pass around a jar of milk and explain that milk is a major source of calcium. Emphasize the similarity of the color of milk to the color of calcium.

Ask students to predict what might happen if they stopped drinking milk. Perform the following illustration to show what can happen when calcium is removed from an eggshell.
1. Place a large piece of cooked egg shell into a glass.
2. Let students feel the hardness of the shell.
3. Cover the shell with vinegar.
4. Put the glass aside for 24 hours.
5. Let students feel the softness of the shell.

(Option: Use a chicken bone, but allow 2-3 days.)

Conclusion: The vinegar has removed the calcium from the shell which caused the shell to become soft and weak.

Use the results to stress the importance of consuming the Recommended Daily Allowance of calcium, which is 800 mg for ages 7-10.

RESOURCES & MATERIALS

Samples of limestone or caliche
Samples of bone tissue
Cooked egg shell
Vinegar
A glass
A jar of milk

TEACHER TIP

Some sources of calcium are:
- **nonfat yogurt**
- **cheese**
- **skim milk**
- **canned salmon**
- **dried peas and beans**

ESSENTIAL ELEMENT

Science. Draw logical inferences, predict outcomes, and form generalized statements. The student shall be provided opportunities to predict the outcomes of actions based on experimence or data.

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Recognize that the growth of microorganisms can be slowed or stopped by preservatives.

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Microorganisms are tiny living cells. When they grow significantly in a food source, the food becomes spoiled. Illness or death can occur if this food is eaten.

Pickles, jams, and bacon take a long time to spoil because they have preservatives. Preservatives are substances that prevent foods from decaying or spoiling.

Perform the following investigation to see how preservatives work.

1. Sterilize all containers by boiling them for 15 minutes.
2. Mix two bouillon cubes with a pint of hot water.
3. Partially fill four glasses with the bouillon stock.
4. Add one teaspoon of salt to one glass, one teaspoon of sugar to one glass, three teaspoons of vinegar to one glass, and nothing to the fourth glass. Cover them immediately.
5. Put all four glasses in a warm place for two days. If the solutions are cloudy, this indicates that microorganisms are growing.
6. Which of the additives act as the best preservative? What other ways can prevent or slow down the speed of microbial growth? List these methods.
7. Which preservative is used in pickles, jelly or jam?

Extension:
Obtain a sample of the cafeteria's homemade bread and a loaf of commercially-prepared bread. Store the breads separately in plastic bags. Compare the time it takes each bread to grow microorganisms. Discuss the results.

RESOURCES & MATERIALS

"Instructor's Resource Guide for Teaching Nutrition Education " found in the introductory section of *ESR IV*

Five glasses
2 bouillon cubes
Salt
Sugar
Vinegar
Large pan to boil the glasses
Teaspoon
Measuring cup
Plastic bag
Homemade bread
Commercially-prepared bread

In advance, ask the cafeteria manager to provide some homemade bread for the extension activity.

ESSENTIAL ELEMENT

Science. Apply defined terms based on observations. The student shall be provided opportunities to use observations to form definitions of objects, actions, organisms, events, and processes.

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

- Recognize the importance of food safety.
- Investigate the effects of refrigeration on bacterial growth.

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Bacteria are often involved in cases of food-borne illness. *Bacteria* are single-celled organisms that can live anywhere people can live. Bacteria are also a normal part of the body.

In order to be seen with the naked eye, bacteria must be grown in large numbers called *colonies* which usually appear as white patches.

Foods are refrigerated because bacterial growth is slowed or stopped by cold temperatures; cooking with hot temperatures helps prevent bacteria from growing. In the following investigation, the students should recognize that it is dangerous to eat refrigerated foods if they have been left out at room temperature for a few hours, or if the food has been stored in the refrigerator for several days.

Bacteria will grow only if they have the right source of food. This experiment will use agar. Follow these instructions:

1. Sterilize all containers by boiling them in water for 15 minutes.
2. Bring one cup of water to a boil. Stir in two teaspoons of powdered agar and boil for five minutes.
3. Pour a thin layer of the liquid in each of the eight petri dishes and cover immediately. The medium will harden as it cools.
4. Be sure to label the dishes. Set two dishes aside for controls and contaminate the others as follows:
5. Tell one student to rub a finger on the agar in two dishes.
6. Scrape the inside of another student's mouth with a cotton swab and wipe it on the agar of the two dishes.
7. Leave two dishes exposed to the air for about 20 minutes.
5. Place one of each set of dishes in a warm place, including the control dishes. Place the other set in a refrigerator.
7. Observe the growth over a five-day period. Record the observations on the worksheet, "Science Observations."
8. After the five-day growth period, ask students to discuss their observations of the growing bacteria.

RESOURCES & MATERIALS

Worksheet: "Science Observations"

"Instructor's Resource Guide for Teaching Nutrition Education " found in the introductory section of *ESR IV*

Large pan
Measuring cup
Teaspoon
Powdered agar
8 petri dishes
Cotton swabs
Burner
Refrigerator

TEACHER TIP

Do not allow the students to open the dishes after they have been contaminated.

ESSENTIAL ELEMENT

Science. Experience in identifying and manipulating the conditions of investigations. The student shall be provided opportunities to set up and conduct experiments using a control group and experimental groups and recognize changes in objects, organisms, and events over time.

NAME ______________________________ DATE ____________________

Science Observations

- Record your observations of the bacterial growth on the chart below.

Observation Chart:

	Day 1	Day 2	Day 3	Day 4	Day 5
Control WARM					
Control REFRIGERATOR					
Mouth WARM					
Mouth REFRIGERATOR					

Questions:

1. Which sample showed the most bacterial growth?

2. Which sample showed the least bacterial growth?

3. Did temperature affect the growth?

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Determine the results of unhealthy food habits.

ASSESSMENT CRITERIA

- Define the role of microorganisms in food.
- Analyze results of exposing food to a variety of conditions.

ACTIVITIES & STRATEGIES

Part 1 of a two-part lesson

Write the definition of molds on the chalkboard. ***Molds*** are microorganisms (or tiny organisms) that reproduce quickly. They produce chemicals that cause changes in foods and other organic materials.

Some of these microorganism changes are good for the body because their action helps produce:
- antibiotics (penicillin)
- bread
- cheese
- buttermilk
- yogurt

Some of these changes are harmful to the body when a microorganism produces food-borne illness which can be serious or even fatal. Microorganisms require certain conditions to live and grow. Ask students to guess the conditions. Answers:
- warmth
- moisture (water)
- food
- time

Explain that when food is prepared or preserved, it must be done in a way that keeps molds from growing so that it will not cause illness.

The experiment on the worksheet, "Mold Growth on Bread," illustrates how a microorganism, classified as mold, grows and flourishes under conditions that promote or inhibit growth.

This is a two-part lesson which should be separated by one week so that the molds will have time to grow. Instruct students to observe data each day for about five minutes and chart their observations on the worksheet.

RESOURCES & MATERIALS

Worksheet: "Mold Growth on Bread"

Integration of Mathematics, Science, and Language Arts Principles in the Home Economics Curriculum, Home Economics Curriculum Center, Box 41161, Texas Tech University, Lubbock, Texas 79409-1161, (806) 742-3029

Sponge
2 resealable plastic bags
2 paper napkins
Refrigerator
5 slices of white bread

TEACHER TIP

Molds grow more rapidly in warm, moist, dark environments. Cool, dry, light places inhibit the growth of molds.

ESSENTIAL ELEMENT

Science. Apply defined terms based on observations. The student shall be provided opportunities to apply knowledge of theories, facts, and concepts in explaining observations in experimental and controlled situations.

NAME ______________________ **DATE** ______________

MOLD GROWTH ON BREAD

Experiment:

1. Dampen a sponge. Use it to dampen only a portion of five slices of white bread.
2. Gently wipe the damp portions over a dusty or unclean surface.
3. Seal one slice of bread in a plastic resealable bag and store in a dark place.
4. Seal another slice in a plastic resealable bag and store in a lighted place.
5. Leave one slice loosely wrapped in a napkin and put in a dark place.
6. Leave one slice loosely wrapped in a napkin and put in a lighted place.
7. Place one slice in a refrigerator in a plastic resealable bag.
8. For a period of one week, observe and record the results on chart below.
9. Answer the questions below the chart.

Observation Chart:

		DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
DARK PLACE	Bread in resealable bag					
	Bread loosely wrapped					
LIGHT PLACE	Bread in resealable bag					
	Bread loosely wrapped					
REFRIGERATION	Bread in resealable bag					

Questions:

1. What sample showed the greatest amount of mold growth?

2. What sample showed the least amount of mold growth?

3. To keep bread fresh longer, what storage conditions are best?

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Interpret experimental results.

ACTIVITIES & STRATEGIES

Part 2 of a two-part lesson

Divide the students into several groups to compare results of the mold experiment in the previous lesson.

Tell each group to discuss:
- the relationship between cleanliness and mold growth
- the conditions that make mold reproduce most quickly
- the kinds of places that are best for bread storage

Encourage the students to apply what has been learned to daily living by asking:
- Does it really matter if hands are washed before eating? Why?
- Where is the best place in the kitchen to store bread?

Select a different person from each group to:
- Report to the class on each question on the worksheet.
- Explain how this experiment has changed the students' views on food handling and habits about food storage and preparation.

This lesson should be conducted one week after Part 1 so that the molds will have had time to grow, and students will have had opportunities to chart their observations.

RESOURCES & MATERIALS

TEACHER TIP

- **The breads stored in the resealable bags, both in the dark and light places, should show more rapid mold growth.**
- **The loosely wrapped bread will dry out and not have the moisture to promote mold growth.**
- **The bread in the refrigerator should show the least amount of growth because the growth is inhibited by the cold temperature.**

In advance, ask the cafeteria manager to discuss with the class safe food handling and storage in the cafeteria.

ESSENTIAL ELEMENT

Science. Apply defined terms based on observations. The student shall be provided opportunities to apply knowledge of theories, facts, and concepts in explaining observations in experimental and controlled situations.

LESSON OBJECTIVE

Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Evaluate activities which require more or less food as the source of energy.

Science **Grade 3**

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Lead a discussion about the relationship of food and calories as an energy source for the body. Use the questions in the opposite column (or similar questions) to begin the discussion.

Give two of the balloons to two students. Instruct one student to blow up the balloon as large as possible. Instruct the other to blow up the other balloon only halfway. Tell both students to stand together and release the balloons at the same time. Which balloon went the farthest distance? Why? (The balloon with the most air should go the farthest.)

Explain that air gives the balloon the energy it needs to move. How far or how long the balloon goes is determined by the amount of air put into it. Everything you do requires energy. Activities like walking, running, swimming, playing sports, and mowing the lawn use large amounts of energy. Watching TV, sitting in class, reading, and sleeping are activities that do not require as much energy.

All food gives us energy, but it is important to choose foods that provide both energy and nutrients. Some foods that provide energy and are good sources of nutrients are cooked dried beans, rice, raisins, potatoes, nuts, peanut butter, bread, macaroni, and cheese. Other foods like tomatoes, broccoli, carrots, and spinach do not provide as much energy, but are good sources of nutrients.

Active people should eat plenty of the high-energy foods. If people fail to eat enough food to provide adequate energy, their bodies will lose weight. If more food is eaten than their bodies need, the excess energy is stored as fat, and weight will be gained.

Use the school lunch menu to identify foods that are good sources of nutrients.

Distribute the worksheet, "Energy," and read the instructions. After completion, review the answers with the class.

RESOURCES & MATERIALS

Worksheet: "Energy"

"Heart Explorers," American Heart Association Schoolsite Program, Grade 3

Three or four balloons
School lunch menu

Questions for discussion:
- Why do you need to eat food?
- What happens if you do not eat enough of the right type of food?
- How do you feel when you are really hungry? (tired, not much energy, cranky)
- How do you feel after eating?

ANSWER KEY

1. reading	**1. raking**
2. knitting	**2. skate**
3. watch	**3. walk**
4. nap	**4. swimming**
5. draw	**5. dancing**
6. write	**6. mowing**

In advance, obtain a school lunch menu from the cafeteria manager.

ESSENTIAL ELEMENT

Science. Communicate data and information in appropriate oral and written form. The student shall be provided opportunities to obtain science information from varied resources.

NAME ______________________ **DATE** ______________

ENERGY

Complete the sentence with the activity that requires ***less*** energy from food.

1. Sue Linn learns many things from ______________ books.
2. Grandmother began ______________ sweaters when she was ten years old.
3. Juan likes to ______________ television after school.
4. Sam was very tired so he took a ______________.
5. Animals are Isaiah's favorite thing to ______________.
6. Brian had to ______________ a story describing his vacation.

Fill in the blanks with the activity that requires ***more*** energy from food.

1. Josh helped his dad clean the yard by ______________ the leaves.
2. Rosie learned to ice ______________ when she was six years old.
3. Alice, Roger, and Manuel ______________ home together after school.
4. La'Shelle enjoys ______________ at the public pool.
5. Katrina is doing very well in her ______________ lessons.
6. Amber is earning extra money by ______________ lawns.

Word list:

dancing
draw
knitting
mowing
nap
raking
reading
skate
swimming
walk
watch
write

On the back of the paper, draw a picture of your favorite activity that requires ***more energy*** from food.

ESR IV
TEXAS EDUCATION AGENCY

Social Studies Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Discuss family food preferences.
- Examine food traditions.

ASSESSMENT CRITERIA

- Locate the country or region of origin of family members.
- Identify foods that reflect the cultural background of the family.

ACTIVITIES & STRATEGIES

Ask the students to define these words:

- *culture*
- *country* or *region of origin*
- *family*

Discuss the many different combinations of family members that can be identified as *family*. Some points to address during the class discussion include:

- Some families do not include a mother and a father.
- *Family* means different things to different people.
- Persons do not have to be related to us by blood or adoption to be part of the family. Discuss foster families and step-families. It is important to assure all of the students that they have someone who cares for them.

Following the discussion, distribute the worksheet, "My Family." Instruct students to ask a family member to assist by recalling information needed to complete the worksheet.

Suggest that students interview a neighbor or a special family friend if a family member is not available. Ask students to bring a recipe that reflects their families' cultures.

Conclude by allowing students to share with the class the information they gathered. Emphasize that the main purpose of the lesson is to learn about cultural diversity.

RESOURCES & MATERIALS

Worksheet: "My Family"

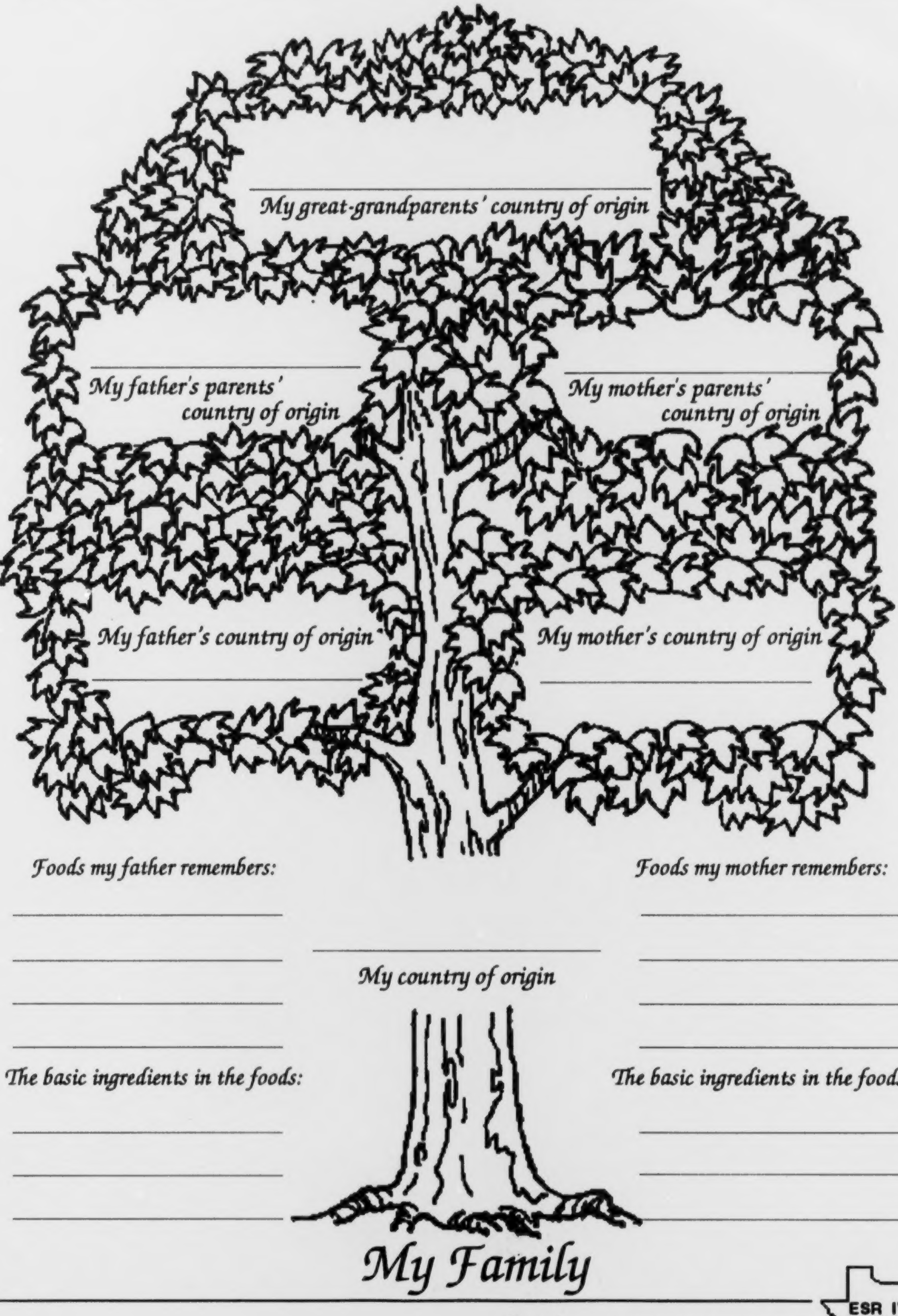
TEACHER TIP

Ask the counselor to be available if you think some students may be sensitive to discussion about families in which one or both parents are absent.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to identify local traditions, customs, and folkways, and to describe how individuals and families change over time.

NAME ______________________________ **DATE** ________________



My great-grandparents' country of origin

My father's parents' country of origin

My mother's parents' country of origin

My father's country of origin

My mother's country of origin

Foods my father remembers:

Foods my mother remembers:

My country of origin

The basic ingredients in the foods:

The basic ingredients in the foods:

My Family

Social Studies Grade 3

3

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Explore food from different cultures and categorize them using a food grouping system.
- Analyze the customs of German, Czechoslovakian, and Polish cultures.

ASSESSMENT CRITERIA

- Identify foods from different cultures.
- Classify foods using a grouping system.

ACTIVITIES & STRATEGIES

Present to the class the following information:

- Germans traditionally eat five times a day:
  - twice in the morning
  - a substantial mid-day meal
  - a coffee hour (kaffee)
  - a simple cold evening meal
- Breakfasts are usually sausages or ham, dark bread or potato salad.
- The coffee hour includes tea and coffee as well as homemade cakes and tarts.
- The main meal traditionally consists of noodle or dumpling soup, roast or casserole, sauerkraut or sausages.
- Germany is a large producer of cabbage. Sauerkraut is a pickled cabbage and is a very versatile dish in Germany. Sauerkraut is served year-round with all meat dishes. Frankfurter and sauerkraut is a traditional snack away from home.
- Germany still has many forests full of game such as deer, boar, rabbit, and pheasant. They are commonly hunted and are primary sources of meat.

On the handout, "German Foods," cut on the dotted lines between each of the German words to make strips.

Allow each student to select from a basket one strip of paper which has a German food named on it. Tell each student to read the name of the food item with the description of the food, and then identify the food group(s) for that food.

Instruct the students to complete the worksheet, "Heidi's German Family Feast."

Discuss how some food dishes, like casseroles, can fit into more than one food group.

RESOURCES & MATERIALS

Worksheet: "Heidi's German Family Feast"

Handout: "German Foods"

Basket

ANSWER KEY

Food	Food Group
Sauerbraten	**Meat/Legumes**
Kartoffelpufffer mit apfelmus	**Vegetables and Fruit**
Rotakohl	**Vegetables**
Bohnensalat	**Vegetables**
Pumpernickel	**Bread/Cereal**
Haselnusscreme	**Dairy and Meat/Legumes**
Kaffee	**Other**

TEACHER TIP

Remind students that some German foods are more nutritious than others.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, cultural factors affecting human behavior. The student shall be provided opportunities to identify local traditions, customs, and folkways.

NAME ______________________________ **DATE** ________________

Heidi's German Family Feast

Heidi's family enjoyed a large family lunch called Mittagessen every Sunday. This is an example of one of their menus:

Sauerbraten *(ZOW-er-braht'en)*
Marinated beef in sweet sour sauce

Kartoffelpufffer mit apfelmus *(kar-TOH-fel-poof-er mit AHP-fehl-moos)*
Potato pancakes with applesauce

Rotakohl *(ROHT-a-kohl)*
Red cabbage

Bohnensalat *(BOHN-en-sah-laht)*
Green bean salad

Pumpernickel *(pum-per-nik-el)*
Rye bread from Westphalia

Haselnusscreme *(HAH-zell-nooss-kreem)*
Hazelnut cream pudding

Kaffee *(KAH-fay) Coffee*

Study this menu and try to determine the food groups that are used in this meal. Fill out the chart below by placing checks in the appropriate boxes.

FOOD GROUPS	Vegetables	Fruit	Dairy	Bread/Cereal	Meat/Legumes	Fats/Sweets
Sauerbraten						
Kartoffelpufffer mit apfelmus						
Rotakohl						
Bohnensalat						
Pumpernickel						
Haselnusscreme						
Kaffee						

German Foods

Ananas (ah-nah-NAHS): pineapple

Apfel (AHP-fehl): apple

Apfelmus (AHP-fehl-moos): applesauce

Appeltate (AHP-pel-tah-teh): a baked dessert of apples, almonds, and raisins

Blindhuhn (BLINT-hoon): a casserole of beans, fruit and vegetables

Blumenkohl (BLOO-men-kohl): cauliflower

Bohnensalat (BOHN-en-sah-laht): green bean salad

Brathandl (BRAHT-hendl): a spit roasted chicken

Bratwurst (BRAHT-voorst): sausage made of freshly ground, seasoned pork

Brot (broht): bread

Ei (I): egg

Ente (EHN-teh): duck

Gurke (GOOR-keh): cucumber

Hasenpfeffer (HAH-zen-pfehf'r): a spicy rabbit stew

Hoppelpoppel (HO-pehl-pohp'l): a dish of fried potatoes mixed with eggs and bacon

Kartoffelsalat (kar-TOH-fel-zah-laht): potato salad

Kipfel (KIP-fel): a crescent roll

Lebkuchen (LAY'p-koo-khen): gingerbread

Linsensuppe (LIN-zen-zoop-peh): lentil soup

Pfefferbrot (PFEHF-fer-broht): spice cake

Pickert (PICK-ert): bread made with wheat or potato flour

Preiselbeeren (PRIZE-el-behr-en): small, tart berries used to make the German equivalent of cranberry sauce

Rosine (roh-ZEE-neh): raisin

Stollen (SHTOHL'en): fruit cakes popular at Christmas time

Wurst (voorst): sausage

LESSON OBJECTIVES

- Develop an appreciation for foods from different cultural groups.
- Analyze the customs of German, Czechoslovakian, and Polish cultures.

ASSESSMENT CRITERIA

Identify food customs from Germany.

Social Studies Grade 3

3

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Explain the word ***custom***: A practice or way of doing things that has been handed down from one generation to the next.

Everyone has to eat to stay alive, but food preferences and ways of preparing foods vary among groups.
Some examples of customs are:

- the holidays we celebrate
- the activities we do during the holidays
- the foods we eat during the holidays

Most American customs were brought by the immigrants from other countries. A large group of immigrants were the Germans. The Germans settled together, and created German communities such as New Braunfels and Fredricksburg, in Central Texas. The Germans have made many important contributions to America. Beethoven and Bach are two German composers and decorating the Christmas tree is a custom brought from Germany.

The Germans also brought food customs with them. The hamburger was originally called the *Hamburg steak* because it was named after the city, Hamburg, Germany. The frankfurter came from Frankfurt, Germany. Since the frankfurter is long and thin, like a dachshund dog, an American street vendor in the early 1900s sold frankfurters as *hot dachshund sausages*. Later, the term became *hot dogs*. Many other foods we eat originated in Germany such as pretzels, gingerbread, apple strudel, and sauerkraut.

Oktoberfest, or October Festival, is a large, sixteen-day celebration in Germany. It began in 1810 to celebrate the wedding of a king. Today, New Braunfels, Texas, celebrates *Oktoberfest* with parades, brightly decorated booths, banners, and a variety of activities and foods.

Distribute the handouts, "Soft Whole Wheat Pretzels," and allow students to participate in making soft pretzels.

RESOURCES & MATERIALS

Handout: "Soft Whole Wheat Pretzels"

Ingredients and equipment for soft pretzels as listed on the handout

TEACHER TIP

Ideas to enhance the lesson:

- **Display German costumes.**
- **Show pictures of people dressed in traditional German costumes.**
- **Play German music.**
- **Show a video on Germany.**
- **Allow students to see and/or taste German sausage, gingerbread men, and sauerkraut.**

- **In advance, check with the cafeteria manager about using the refrigerators and ovens in the cafeteria kitchen.**
- **Ask the cafeteria manager if some German foods could be served in the school cafeteria during the week of this study.**

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to identify local traditions, customs, and folkways.

NAME ______________________________ **DATE** ________________

Soft Whole Wheat Pretzels

30 servings

INGREDIENTS

- 16 oz. (3 loaves) frozen whole wheat bread dough (found in freezer section at store)
- 2 egg whites, beaten with 2 teaspoons water
- Coarse salt
- Oil or shortening to grease pan

EQUIPMENT NEEDED

- Refrigeration or cooler
- Baking sheet
- Pastry brush for egg white
- Oven
- Paper towels, soap, water
- Pancake turner
- Pot holders
- Oven-proof cup

TO DO AHEAD

1. **Thaw** bread in the refrigerator overnight.
2. From each frozen loaf, **make 12** 1 1/2-inch dough balls.
3. **Cover** and **refrigerate** dough balls until it is time to prepare pretzels.
4. **Set up** a work area for preparing the pretzels.

INSTRUCTIONS

1. **Wash hands** and **clean** the work area.
2. **Roll** each ball into a snake-like rope about 14 inches long.
3. **Shape** the rope into a pretzel by forming a knot and looping the ends through it, or shape initials for easy identification.
4. **Place** pretzels one inch apart on a well-greased cookie sheet.
5. Let them **stand** 20 minutes.
6. **Place** a cup of hot water in the center of the cookie sheet to provide moisture during baking.
7. **Brush** pretzels with egg whites.
8. **Sprinkle** pretzels with coarse salt.
9. **Bake** at 350 degrees for 20 minutes.
10. **Wash** utensils and **clean** area.

Education
for
Self-Responsibility IV:

NUTRITION
EDUCATION

GRADE
4

ESR IV

TEXAS EDUCATION AGENCY

French, Irish, and Italian Americans in Texas

Grade Four

THE FRENCH TEXANS

French immigrants began to settle in Texas in 1842 when Henry Castro received two land grants along the Medina River west of San Antonio. These settlers established the towns of Castroville and D'Hanis located east of San Antonio, as well as Vandenburg and Quihi.

In the mid 1800s, land near Dallas was purchased for a colony of well-educated and highly skilled French immigrants. The colony broke up after two years, with many of its residents moving to the Dallas area.

In the mid 1870s, many French Texans became involved in the Franco-Texan Land Company which purchased land surrounding the railroads. Many of the French investors established farms and ranches on this land, which soon became known as Mineral Wells and Baird.

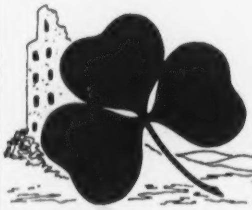
The old French culture remains intact among the descendents of the early French immigrants living in and around Castroville. The French culture and influence has also been enhanced by Cajuns who live in the Beaumont-Port Arthur area and East Texas. ***Cajuns*** are natives of Louisiana who are descendents of the Acadian French immigrants. In the mid 1700s, Acadian French settlers immigrated to Louisiana from Acadia, a former French colony (1604 - 1713) off the coast of northeast America in the area that now includes Nova Scotia, New Brunswick, Prince Edward Island, and parts of Quebec and Maine. Cajuns speak a unique form of the French language called Cajun French which for many years was not written down, but passed verbally from generation to generation. When new words were needed for things such as electricity and cars, the Cajun French adapted words from the English, Indian, and Spanish languages thus adding to the uniqueness of their own language.

French-Texan celebrations have helped to maintain the traditions brought to Texas by the early immigrants. ***L'Alliance Francaise*** is a club found in many college towns and large cities that sponsors activities to perpetuate the French language and customs. The club hosts the annual ***Bastille Day*** ball held on July 14 which is the French equivalent of the U.S. Fourth of July. Port Arthur also hosts an annual ***Crawfish Festival*** in July that emphasizes the more recent French immigration trend of the Louisiana Cajuns. They immigrated to Texas during both World Wars to work in defense-related industries. Thousands of people visit the festival to sample Cajun foods which are adaptations of French recipes applied to native foods, such as gumbo, red beans and rice, and jambalaya.

THE IRISH TEXANS

The earliest record of the Irish in Texas was that of a Spanish army officer named Hugo Oconor who was known as 'The Red Captain' by the Indians because of his red hair. Oconor had joined the Spanish army and was transferred to Mexico, or New Spain, in 1763 where he served as interim governor of Mexican Texas and was a military coordinator for the Mexican army. Another Irishman, from Belfast, was Philip Nolan. He visited Thomas Jefferson in the late 1700s and returned with an expedition to build a fort between present day Waco and Fort Worth. Nolan and some of his men were later killed by the Spanish.

Since Mexican citizens were required to be Catholics, the Mexican government encouraged the immigration of Irish Catholics to Mexican Texas in the 1820s to an area along the Nueces River. The capital was named San Patricio de Hiberniag. Another group of Irish immigrants came to Texas in 1831, settling around the old Franciscan mission at Refugio. Soon, a number of Protestant Irish families came and settled in Staggers Point in present day Robertson county. As the settlement grew and the railroad was built, the name of the town was changed to Benchley, after the conductor of the first train to pass through the town.



The Irish settlers found that the food in Texas was quite different from their homeland foods, but soon adapted and incorporated cantaloupes, okra, peppers, sweet potatoes, and watermelons into their diets. Some adapted traditional foods included: beef and potatoes; boxty - a potato dish served on Halloween; soda scones - a teatime snack; and Barm Brack - a bread whose name means yeast loaf. This bread is baked with a gold ring in it, and the legend says that the individual who finds the ring is to be married within a year.

THE ITALIAN TEXANS

In the 1500s and 1600s, Italy was broken into a number of small kingdoms and republics which were not strong enough to send their own exploration groups to America. Those Italians who were interested in exploration joined the armies of other countries. For example, there were many Italians in Vasquez de Coronado's expedition in 1541 and in the expeditions of the French explorer La Salle. Additionally, Italian born General Vicente Filisola was second in command of the Mexican army of Santa Anna during the Texas Revolution, and Prospero Bernardi is the only Italian known to have fought with the Texans at the battle of San Jacinto. Bernardi received two land grants for his services, one in Somervell County and one in San Patricio County.

Prior to Texas' independence from Mexico, only a few individual Italians had settled in Texas, but Italian immigration to Texas greatly increased after the Civil War. In the 1880s, Italians arrived in organized groups and settled in Galveston, San Antonio, Bryan, Hearne, Houston, Dickinson, and near the Red River in Montague County. The coal mine town of Thurber in Erath County was also the site for many Italian immigrants until the mines closed in 1921.

One of the most significant contributions to Texas was made by an Italian named Adam Janelli. He brought the Salvation Army to Dallas in 1889, where he served as treasurer until his death. He was largely responsible for the construction of the Salvation Army Hall on Federal Street.

Wherever the Italian Texans settled, they formed their own organizations and maintained many of their homeland traditions. San Antonio is the site of an Italian parish, *San Francesco di Paola*, and the Christopher Columbus Italian Society. An important Italian tradition celebrates the Feast of St. Joseph who is the patron Saint of Italy. This celebration is held during Lent on March 19, so the foods are prepared without meat and include fish, pizza, and spaghetti, along with biscuits, cakes, pies, and vegetables.

The traditional foods brought to Texas by Italian immigrants which are still popular today include: ravioli, manicotti, lasagne, spaghetti, pizza, artichokes, biscotti (a basic Italian cookie), carrots, capers, cauliflower, eggplant, fennel, meatballs, spinach, string beans, and veal.

Today, very few Italian Texans still speak Italian, and the last Italian newspaper in Texas ended publication in 1962. However, there are many visible signs of the Italian culture in Texas. For example, fruits and vegetables are still grown by and purchased from descendents of the early Italian immigrants in Montague county. The Christopher Columbus Italian Society in San Antonio still attracts hundreds of Italian Texans as well as non-Italian Texans at its spaghetti dinners.

Fine Arts **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

List the functions of dietary fiber in the body.

ASSESSMENT CRITERIA

- Identify foods that are high in fiber.
- Investigate new foods that help protect the body from disease.

ACTIVITIES & STRATEGIES

Explain that the foods we eat can reduce the risk of developing certain diseases such as cancer.

- Foods that are high in fiber:
  - keep food moving in the intestines
  - lower the risk of colon disease (The colon is a part of the large intestine.)
  - help keep digestive muscles well-toned which helps lower the risk of blood vessel disorders
  - absorb water and give a feeling of fullness which helps with weight control
- Fruits and vegetables contain fiber.
  Many of them also contain vitamin A or carotene which is also believed to reduce the risk of disease.
- Whole-grain products, not just whole wheat, are excellent sources of fiber.

After making a copy of the teacher resource page, "Foods That Lower the Risk," ask students to help you cut the copy into strips, placing the words into a basket or bowl.

Instruct the students to each draw one slip and play charades with the food name on that strip.

- Go over signals first, for "sounds like," number of syllables, and other key clues.
- Use the following example: Apricot has three syllables and a student could imitate an ape for the first syllable and a cot for the last syllable.

RESOURCES & MATERIALS

Teacher Resource: "Foods That Lower Risk"

"Changing the Course: Upper Elementary Curriculum," American Cancer Society

TEACHER TIP

Act out the first charade or divide students into small groups if students are shy or unfamiliar with the game.

ESSENTIAL ELEMENT

Fine arts. Theatre arts. Expressive use of the body and voice. The student shall be provided opportunities to express concepts using interpretive movement.

Foods That Lower the Risk

Whole wheat bread
Apple
Cornbread
Orange
Lemon
Brown rice
Broccoli
Raisin
Grapefruit
Lime
Popcorn
Chicken without skin
Apricot
Tangerine
Pineapple

Bran cereal
Cabbage
Canteloupe
Peach
Strawberry
Oatmeal
Black-eyed pea
Mango
Nectarine
Watermelon
Pinto bean
Low-fat milk
Papaya
Cherry
Raspberry

LESSON OBJECTIVES

- Develop healthy eating habits.
- Analyze daily food choices.

ASSESSMENT CRITERIA

Evaluate personal dietary habits.

Health **Grade 4**

4

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Show the transparency, "Appendix C: A Pattern for Daily Food Choices." Discuss the food groups and the number of servings needed from each food group to maintain good health.

Nutrients and calorie needs vary from person to person, depending on:

- age
- gender
- body size
- activity level

Review with the students:

- They should eat at least the lower number of servings from each food group.
- If more calories are needed, increase foods from all five food groups.
- Eat in moderation the foods which are not included in the five food groups. These foods are sometimes classified as *other foods.*

Display the food pictures on a table. Divide the class into five groups and assign each group one of the five food groups. Instruct each group to select the food pictures which belong in their food group.

Tell the students to refer to the transparency of "Appendix C: A Pattern for Daily Food Choices" for each food picture selected to determine the size of the servings and the number of servings needed for good health and wellness.

Distribute the worksheet, "Your Dietary Habits Chart." Instruct the students to fill in the worksheet chart for the foods that they have already eaten today and complete the chart tonight after they have finished dinner or a snack.

Tell students to bring the worksheet back to class tomorrow to answer the questions and discuss the worksheet with the other students in their group.

RESOURCES & MATERIALS

Worksheet: "Your Dietary Habits Chart"

Transparency: "Appendix C: A Pattern for Daily Food Choices"

Pictures of foods or a set of cardboard *Food Models* from the National Dairy Council, 6300 North River Road, Rosemont, IL 60018-4233 (702) 696-1860, Ext. 220

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to make some food choices for self.

NAME ______________________ **DATE** ______________

Your Dietary Habits Chart

Directions: Make a star under the appropriate meal or snack and the correct food group for each serving of food you will eat today. One star equals one point. Do not give yourself points for "Other Foods." Total the number of servings for each food group.

FOOD GROUPS	Breakfast	Lunch	Dinner	Snacks	Total eaten each day
VEGETABLES					
FRUITS					
CEREAL, BREAD, RICE,& PASTA					
MILK, YOGURT, & CHEESE					
MEAT, POULTRY, FISH, BEANS & PEAS, EGGS, NUTS, & SEEDS					
OTHER FOODS					

Questions:

1. Study the transparency: "A Pattern for Daily Food Choices." Did you eat foods from each of the food groups?

2. Which food groups are missing?

3. From which groups did you not eat at least the lower number of servings?

4. How can you improve your food choices?

LESSON OBJECTIVES

- Make wise food choices as part of self-responsibility for health and wellness.
- Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

Explain that eating nutritious food will help the heart stay strong and healthy.

Health **Grade 4**

4

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

It is estimated that more than half of the people who die in the United States each year die of cardiovascular disease. Cardiovascular disease is a term that covers all the diseases of the heart and blood vessels. Poor food choices and lack of exercise can contribute to obstructions in the arteries and can cause heart attacks.

Ask the students:
- What does our heart do?
- How can you keep your heart healthy?

Stress the importance of making healthy food choices to help their hearts grow strong and healthy.

1. Tell the students to clasp their hands together and place in the center of their chests. Explain that your heart is about the size of your fist.
2. Your heart beats slowly when you are asleep. It beats fast when you are active.
3. Allow each student to find his or her pulse (heart beat) on the wrist or neck.
4. Tell students to count each beat for one minute while sitting. Then count the number of beats after running in place for one minute. The average rate for a ten year old is 90 beats per minute.
5. Record the numbers on the worksheet, "In A Heart Beat."
6. Make a list of some foods that are good for your heart. (See "Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*.)

RESOURCES & MATERIALS

Worksheet: "In A Heart Beat"

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

"Getting to Know Your Heart," American Heart Association Schoolsite Program, Upper Elementary

TEACHER TIP

There are two ways to take a pulse:
- **Use two fingers, not thumb, and gently place on opposite wrist by the thumb side.**
- **Gently place fingers on center of neck and slide to one side. Do not push both sides of neck at the same time.**

ESSENTIAL ELEMENT

Health. Concepts and skills that foster individual personal health and safety. The student shall be provided opportunities to make some food choices for self.

NAME ______________________________ **DATE** ________________

In a Heartbeat

My pulse rate ***when sitting*** for one minute is: __________.

My pulse rate ***after running in place*** for one minute is: __________.

Foods that are heart healthy:

1.

2.

3.

4.

5.

6.

7.

Foods that should be limited:

1.

2.

3.

4.

5.

6.

7.

Language Arts **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Describe the relationship of food to energy, growth, and health.
- Make wise food choices using the daily food guide.

ASSESSMENT CRITERIA

Name the food groups and classify common food items according to each food group.

ACTIVITIES & STRATEGIES

Help students recognize the relationship of food to growth and health of all living things.

- Food influences growth.
  - ° Vitamins and minerals are needed for every bodily function, from sneezing to sleeping.
  - ° Nutrients in food maintain and build body tissue, so you are what you eat.
- Food supplies energy. Carbohydrates are broken down for body fuel.
- Food repairs cells in the body.
- Protein, with help from all the other nutrients, is used to build new cells.
  - ° Our bodies systematically replace every cell that is lost.
  - ° Three to five percent of the protein in the body is replaced each day.
  - ° Red blood cells live for only about 120 days.
  - ° Cells in the stomach lining need to be replaced about every three days.
  - ° The cells of the skin are renewed about every seven years.
- Foods are grouped because they have similar nutrients.

Distribute the worksheet, "Make-A-Meal."

Prepare a transparency of "Appendix C: A Pattern for Daily Food Choices" and display for the students. Discuss with the students.

Distribute the worksheet. Review the worksheet instructions with the students, then allow them to complete the worksheet.

After everyone has finished, ask students to share their totals, and discuss ways to improve their diets.

RESOURCES & MATERIALS

Worksheet: "Make-A-Meal"

Transparency: "Appendix C: A Pattern for Daily Food Choices"

Overhead projector

ESSENTIAL ELEMENT

Language arts. Applying reading skills to a variety of practical situations. The student shall be provided opportunities to follow multistep directions.

NAME ______________________________ **DATE** ______________

Make-A-Meal

Make your own meals for breakfast, lunch, dinner, and snacks for one day by selecting some food items on the bottom half of the page and writing your selections in the *meal* column of the box. Then, in the *Food Group* column of the box, write the name of the food group to which each food item belongs. If your food selection does not fit into any of the five food groups, write the word *other* in the *Food Group* column.

Breakfast Item	Food Group

Lunch Item	Food Group

Dinner Item	Food Group

Snack Item	Food Group

Tally the number of servings for each food group from your meal boxes.

_____	_____	_____	_____	_____	_____
VEGETABLES	FRUITS	BREADS , CEREALS, RICE, & PASTA	MILK, YOGURT, & CHEESE	MEAT, POULTRY, FISH, DRY BEANS & PEAS, EGGS, NUTS, & SEEDS	OTHER

Then check the Appendix C transparency to see if you have matched the suggested daily number of servings for each food group for the day.

cake
corn
nuts
orange
juice
apple
toast
hot rolls
chicken
butter
grapes
green beans
corn flakes
carrots
potato
ice cream
hot dogs
potato chips
bread
raisins
jelly
milk
banana
cheese

Language Arts **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Classify foods using a food grouping system.

ASSESSMENT CRITERIA

- Explain the purpose of the School Lunch Pattern.
- Categorize foods into the five food groups using the School Lunch Pattern.

ACTIVITIES & STRATEGIES

Explain to the students that the school food service is required to serve certain types and portions of food. This is called a School Lunch Pattern. Explain that this Pattern is based on basic food groups and quantities of foods that will provide approximately one-third of a student's nutritional needs.

School cafeterias should follow the pattern to make sure students eat the right food to maintain good health. If a school serves lunches that follow the School Lunch Pattern, it receives reimbursement and extra food items from the Federal government.

Distribute the worksheet, "What's for Lunch?" Discuss the food groups and portion sizes on the worksheet. Allow students to complete the worksheet, then review the answers.

Using the School Lunch Pattern on the worksheet, lead the students in planning a sample lunch menu. Guide the students in assessing each category of their sample menu, making sure it meets the qualifications for an adequate school lunch.

Distribute lunch menus provided by the cafeteria manager to use as examples in creating their own menus.

Review today's school lunch menu and identify the food groups of each food item.

RESOURCES & MATERIALS

Worksheet: "What's for Lunch?"

"Appendix C: A Pattern for Daily Food Choices"

TEACHER TIP

The total weight portion of any meat/meat alternate may vary in order to provide the required two ounces of meat.

In advance, ask the cafeteria manager to provide one week of lunch menus and to explain the requirements of the School Lunch Pattern to the students.

ESSENTIAL ELEMENT

Language arts. Listening. Developing skills in attending to, responding to, and analyzing oral communications. The student shall be provided opportunities to employ active listening in a variety of situations; recognize a speaker's purpose for a presentation, and select from an oral presentation the information needed.

NAME ______________________________ **DATE** ______________

What's for Lunch?

SCHOOL LUNCH PATTERN

(for ages nine and above)

Components	Food Item	Minimum Portion
I. Milk	♥ Unflavored, low-fat, and whole milk must be offered ♥ Other milks may be offered	1/2 pint
II. Meat and Meat Alternate	♥ Lean meat, poultry, or fish ♥ Cheese ♥ Large egg ♥ Cooked dry beans or peas ♥ Peanut Butter (Or an equivalent quantity of any combination of any of the above)	2 ounces 2 ounces 1 1/2 cup 4 tablespoons
III. Vegetables/ Fruits	♥ Choose from a variety of fruits and vegetables	2 servings (total 3/4 cup)
IV. Bread/ Bread Alternate	♥ Must be enriched or whole-grain ♥ Alternates include rice, macaroni, noodles, other pastas, also cereals, such as bulgur or corn grits, biscuits, rolls, or muffins	8 servings/week

Directions:

1. Discuss the sample menu below. The menu follows the School Lunch Pattern.
2. Identify the food group of each food item.

Food Item	Food Group
2 oz. Baked chicken	
1/2 cup Rice	
1/4 cup Broccoli florets	
1/2 cup Peach slices	
1 Whole wheat roll	
8 oz. Milk	

Language Arts **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify basic nutrition information on food labels.

ASSESSMENT CRITERIA

Compare the ingredient listings on food products.

ACTIVITIES & STRATEGIES

Display a package with the ingredient listing from a food such as canned chili, macaroni and cheese, beans and weiners, corn dog, or cereal. Ask the students to name the ingredients they think were used to make the product. Read the ingredient listing to the students. Discuss their reactions to the actual ingredients included in the product.

Using the transparency, "What Is In My Soup?," discuss with the students the benefits of reading ingredient listings. Compare the ingredients in *Soup A* and *Soup B* using the following points.

- Determine quality.
  - Which product has more meat?
  - Which product has more noodles?
  - Which product has enriched noodles?
- Identify ingredients that should be limited.
  - Which product(s) have animal fat as an ingredient?
  - Which product has the most additives?
  - How many times is salt listed in each product?
  - Which product would you want to buy? Why?

Explain that sugar, salt, and additives have many different forms and names.

Explain the ***standard of identity:*** the specifications set up by the FDA for certain common foods. The standard specifies which ingredients a product must contain. The list of ingredients is not required on the food package label because the product must meet these standards before it can be sold. (Examples: catsup, mayonnaise, ice cream)

Distribute the worksheet, "Name That Food!," and ask the students to complete it. Discuss the answers with the class.

Alternate Activity:
Assign students to write a set of specifications for their favorite foods.

RESOURCES & MATERIALS

Worksheet: "Name That Food!"

Transparency: "What Is In My Soup?"

Packages with ingredient listings from a food item that children like such as corn dogs, macaroni and cheese, or high sugar cereal

ANSWER KEY

1. C
2. D
3. B
4. E
5. A
6. Each answer will be unique.

In advance, ask the Food Service Director to explain how food service develops specifications for foods served.

ESSENTIAL ELEMENT

Language arts. Reading. Applying reading skills to a variety of practical situations. The student shall be provided opportunities to use graphic sources for information such as simple maps, globes, pictures, diagrams and bar graphs and adjust the method and rate of reading to the purpose and type of material including study-type reading.

WHAT IS IN MY SOUP?

- **Most products are labeled with a complete listing of the ingredients.**
- **The ingredients are listed in descending order by weight.**
  (For example, if water is listed first, there is more water in the product than any other single ingredient.)

Reading and comparing ingredient listings is helpful so buyers can:

- ✓ **Determine the quality of the ingredients.**
- ✓ **Limit ingredients such as:**
  - **Fats**
  - **Sugar**-(sugar, corn syrup, maple syrup, molasses, honey, dextrin, dextrose, sorghum, brown sugar, sorbitol, mannitol, sucrose, fructose, lactose, galactose, glucose, and maltose)
  - **Salt**-(sodium chloride, MSG-monosodium chloride, baking soda, brine, sodium alginate, sodium hydroxide, sodium saccharin, sodium sulfite)
  - **Additives**
- ✓ **Avoid ingredients that would affect allergies (MSG, sulfites).**

The ingredient listing tells buyers *what* ingredient there is more of; it does *NOT* tell *how much more* of it there is.

Chicken Noodle Soup A	**Chicken Noodle Soup B**
CHICKEN STOCK, CHICKEN MEAT, CELERY, CARROTS, ENRICHED EGG NOODLES, WATER, SALT, POTATO STARCH, MONOSODIUM GLUTAMATE, CHICKEN FAT, MARGARINE, SUGAR, ONION POWDER, NATURAL FLAVORING, SPICE, AND DEHYDRATED GARLIC.	CHICKEN BROTH, EGG NOODLES, CHICKEN, POTATO STARCH, CARROTS, SALT, CHICKEN FAT, SOYBEAN OIL, DEXTROSE, SEASONING (ONION POWDER, HYDROLYZED VEGETABLE PROTEIN (WITH DISODIUM INOSINATE AND DISODIUM GUANYLATE), TORULA YEAST, FLAVORING TUMERIC, GARLIC POWDER), MONOSODIUM GLUTAMATE, YEAST EXTRACT, VINEGAR, OLEORESIN CARROT.

Exceptions to the rule requiring ingredient listings:

Standard of identity: the specifications set up by the FDA for certain common foods. The standard specifies which ingredients a product must contain. The list of ingredients is not required on the food package label because the product must meet these standards before it can be sold.

(Examples of foods that fall under the standard of identity include: catsup, mustard, mayonnaise, jelly, ice cream, and cheese.)

NAME ______________________________ DATE ________________

NAME THAT FOOD!

Write the letter for the name of the food on the right that matches the ingredient listing on the left, then answer the question at the bottom of the page.

_____ 1. FRESH ROASTED PEANUTS; WITH SUGAR, HYDROGENATED VEGETABLE OIL (TO PREVENT SEPARATION), SALT, MOLASSES, MONO- AND DIGLYCERIDES (TO IMPROVE CREAMINESS)

_____ 2. ROLLED OATS (WITH OAT BRAN), SUGAR, DEHYDRATED APPLES (TREATED WITH SULFUR DIOXIDE, SODIUM SULFITE, AND SODIUM BISULFITE TO PROMOTE COLOR RETENTION), CALCIUM CARBONATE (A SOURCE OF CALCIUM), SALT, CINNAMON, GUAR GUM, NATURAL FLAVORS, VITAMIN A PALMITATE, REDUCED IRON, NIACINAMIDE, PYRIDOXINE HYDROCHLORIDE, THIAMINE MONONITRATE, RIBOFLAVIN, FOLIC ACID

_____ 3. CULTURED PASTEURIZED GRADE A LOWFAT MILK & NONFAT SOLIDS

_____ 4. PEACHES, WATER, SUGAR SYRUP, CORN SYRUP, ARTIFICIAL FLAVORINGS

_____ 5. COOKED BEANS, WATER, ONIONS, CHILI PEPPER, CHOPPED GREEN CHILI, STARCH, SALT , SUGAR, FLAVORINGS, PAPRIKA

A. Chili with Beans
B. Yogurt
C. Peanut Butter
D. Cinnamon Apple Oatmeal
E. Chunky Peaches

6. Foods that meet the standards of identity are not required by law to list the ingredients. Do you think that the ingredient listing should be required on these products? Thoroughly explain your answer.

____

____

____

Language Arts Grade 4

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify basic nutrition information on food labels.

ASSESSMENT CRITERIA

Research information on food packaging and interpret findings.

ACTIVITIES & STRATEGIES

Write the definition of the term ***nutrient*** on the board; see "Appendix G: Glossary of Terms."

Display food labels in a designated area.

Distribute the worksheet, "Label Lingo." Instruct the students to select one food item, then read and interpret label information by answering the questions on the worksheet as they study the display of packaging.

Allow students to evaluate their own worksheet by checking an available copy of the answer key or post an answer key on the wall.

Optional activity:
Divide students into small groups with one to two labels per group and ask each group of students to evaluate the label information. Then select a leader from each group to present the group's findings to the class. Allow the class to discuss their findings.

RESOURCES & MATERIALS

Worksheet: "Label Lingo"

"Appendix G: Glossary of Terms"

An assortment of food labels and food packaging information collected by the teacher or students

Several copies of the Answer Key

ANSWER KEY

1. **Answers will vary.**
2. **Serving size, servings per container, calories, protein, carbohydrate, fat, cholesterol, sodium, and in some cases potassium**
3. **Protein, carbohydrate, fat, sodium (mineral), and potassium (mineral), riboflavin (vitamin)**
4. **For total contents**
5. **It can be used to determine the number of servings.**
6. **Answers will vary.**
7. **Answers will vary.**
8. **This answer requires critical thinking. Solicit several opinions.**

In advance, ask the cafeteria manager to provide labels from institutional packages or cans and help the students compare them to the labels on food items at home.

ESSENTIAL ELEMENT

Language arts. Applying reading skills to a variety of practical situations. The student shall be provided opportunities to use graphic sources for information such as simple maps, globes, pictures, diagrams, and bar graphs.

NAME ________________________________ **DATE** ____________________

LABEL LINGO

Select one food item label from the ones displayed. Read and interpret the label information and answer the following questions.

1. Name the food in the package.

2. What nutrition information is written on the food label?

3. Classify the ***nutrients*** named in the nutrition information. Hint: sodium and potassium are minerals.

4. Are calories given for total contents or for each serving?

5. How does serving size weight help in meal planning?

6. The *NET WT.* tells the consumer the actual weight of the food without the package. What is the net weight of the food you are researching?

7. Ingredients are listed in decreasing order by weight. What ingredient does the food product you are researching have the most of? What ingredient does it have the least of?

8. What information would be helpful to the consumer that is not listed on the label?

LESSON OBJECTIVE

Classify foods using a food grouping system.

ASSESSMENT CRITERIA

Identify the number of servings needed from each food group.

ACTIVITIES & STRATEGIES

Using "Appendix C: A Pattern for Daily Food Choices" as a transparency, explain to the students that the United States Department of Agriculture and the United States Department of Health and Human Services developed guidelines to help individuals achieve adequate amounts of nutrients.

Write the sample menu or a school breakfast or lunch menu and a snack on the board, or enlarge and copy on an overhead transparency.

MENU

Breakfast
1 biscuit (Bread group)
1 slice ham - 1 serving (Meat group)
1 cup milk (Milk group)
3/4 cup fruit juice (Fruit group)

Lunch
1 slice cheese pizza
(Milk group and Bread group)
1/2 cup carrot sticks (Vegetable group)
1 whole pear (Fruit group)
1 cup milk (Milk group)

Snack
1 peanut butter and jelly sandwich
(1 Meat group and 2 Bread group)
1 cup milk (Milk group)

Dinner
2 oz. baked fish (Meat group)
1 baked potato (Vegetable group)
1/2 cup broccoli (Vegetable group)
1/2 cup fruit salad (Fruit group)
1 dinner roll (Bread group)
1 cup milk (Milk group)

Tell the students to classify foods according to the five food groups and then count the number of servings in the menu. Ask the students if the menu provides the suggested minimum number of servings.

The recommended minimum numbers of servings are:
- Vegetable group - 3 servings
- Fruit group - 2 servings
- Bread group- 6 servings
- Milk group - 3 servings
- Meat group - 2 servings

Distribute and review the worksheet, "Does It Measure Up?" with the students. After completion, review the answers with the class.

RESOURCES & MATERIALS

Worksheet: "Does It Measure Up?"

Transparency: "Appendix C: A Pattern for Daily Food Choices"

"Getting to Know Your Heart," American Heart Association Schoolsite Program, Upper Elementary

Several school breakfast and lunch menus
A menu made into a transparency, if desired

Overhead projector

ANSWER KEY

Student #1:	Student #2:	Student #3:
5<	6=	4<
4>	3>	1<
2<	3=	1<
1<	2=	2=
3=	2<	4>

In advance, check with the cafeteria manager to obtain several school breakfast and lunch menus.

ESSENTIAL ELEMENT

Mathematics. Problem solving. Experience in solving problems designed to systematically develop students' problem-solving abilities through a variety of strategies and approaches. The student shall be provided opportunities to analyze problems by identifying relationships, discriminating relevant from irrelevant information, sequencing, observing patterns, prioritizing and questioning.

NAME ______________________________ DATE ________________

DOES IT MEASURE UP?

Mr. Burns' second grade class has been studying the food groups and how it relates to eating a well-balanced diet. The suggested minimum number of servings for each food group are:

FOOD GROUP	MINIMUM # SERVINGS
Vegetables	3
Fruits	2
Bread, cereals, and other grain products	6
Milk, cheese, and yogurt	3
Meat, poultry, fish, eggs, and nuts	2

Below are the foods each student ate for one day. Add together the number of servings of food for the food group in each row. Using the chart above as a guide, indicate whether or not each of the following students met the minimum number of servings with >, <, or =.

	Total # of Servings	> or < or =
Student #1		
1/2 c. oatmeal, 2 slices toast, 1 tortilla, 1 roll	________	________
3/4 c. orange juice, 1 apple, 2 bananas	________	________
1/2 carrot, 1/2 c. corn	________	________
1 serving chicken	________	________
1 1/2 oz. cheddar cheese, 1 cup milk, 8 oz. yogurt	________	________
Student #2		
3 pancakes, 4 crackers, 1 whole hamburger bun	________	________
3/4 c. apple juice, 1/2 c. grapes, 1/2 c. fruit salad	________	________
1/2 c. lettuce, 1/2 c. tomato, 1/2 c. potato	________	________
2 oz. sausage, 3 oz. roast beef	________	________
1 c. milk, 2 oz. cheese	________	________
Student #3		
2 servings of cereal, 1 slice of toast, 1 roll	________	________
1 orange	________	________
1/2 c. green beans	________	________
3 oz. baked fish, 2 oz. pork chop	________	________
2 c. milk, 1/2 oz. Swiss cheese, 8 oz. yogurt	________	________

Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Make wise food choices at snack time.
- Discuss the nutritional needs of nine and ten year olds.

ASSESSMENT CRITERIA

Identify fractions using applicable nutrition concepts.

ACTIVITIES & STRATEGIES

Distribute and review the worksheet, "Fractions to Live By," with the students. Allow them to complete the worksheet.

Lead a discussion of the following nutrition facts:
- A chocolate candy bar contains more than **one-half** sugar.
- A banana for snack time will provide **one-quarter** of one's daily fruit needs.
- **Fifty percent** of everything eaten should be ***complex carbohydrates***. Refer to "Appendix G: Glossary of Terms."
- Breakfast should include **one-third** of the calorie intake every day.
- **Three-quarters** of the salt Americans consume comes from ***processed foods***. Refer to "Appendix G: Glossary of Terms."
- A popular sweetened breakfast cereal has as much as **sixty percent** sugar. That is more than the chocolate candy bar.
- Sugar should not be more than **one-tenth** of your daily intake.
- No more than **three-tenths** of your daily calories should come from fat.

Ask the students what might be a nutritious choice instead of a candy bar for a snack. Answer: a piece of fruit. Fruit has vitamins and minerals that nine and ten year olds need, and it is naturally sweet.

Ask the students to think of a nutritious breakfast choice instead of sweetened cereal. Answer: Peanut butter and banana slices on toast with a glass of milk. This choice includes one serving from the meat group, the fruit group, the bread group, and the milk group.

Ask students to evaluate their own work as you review the answers.

RESOURCES & MATERIALS

Worksheet: "Fractions to Live By"

"Appendix G: Glossary of Terms"

"Getting to Know Your Heart," American Heart Association Schoolsite Propram, Upper Elementary

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ESSENTIAL ELEMENT

Mathematics. Number and numeration concepts. Concepts and skills associated with the understanding of numbers and the place value system. The student shall be provided opportunities to use concrete models to generate patterns of equivalent fractions and record the patterns.

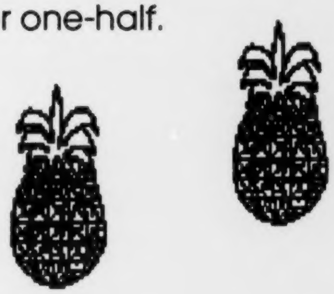
NAME ______________________________ **DATE** ____________________

Fractions to Live By

Identify the fractions in each group and color the objects.

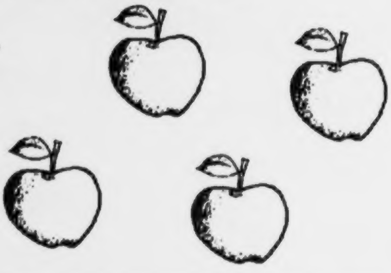
1. Color one-half.

$\frac{1}{2}$



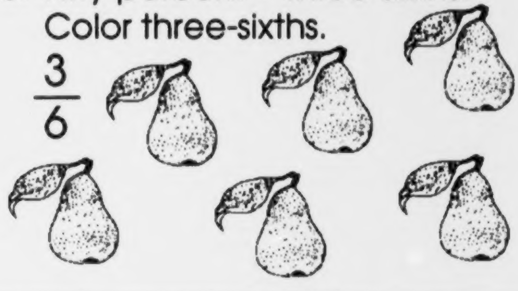
2. Color one-quarter.

$\frac{1}{4}$



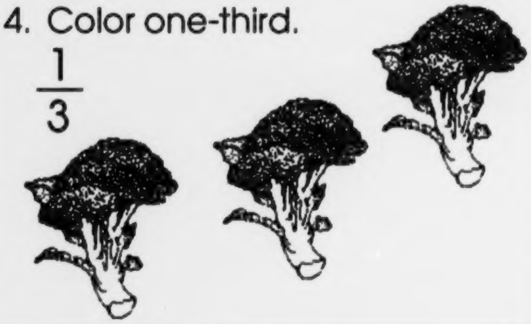
3. Fifty percent = three-sixths. Color three-sixths.

$\frac{3}{6}$



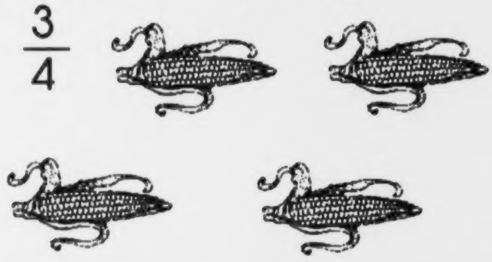
4. Color one-third.

$\frac{1}{3}$



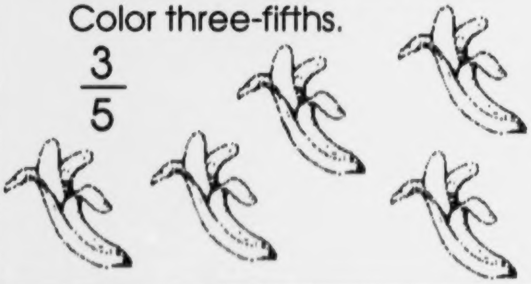
5. Color three-quarters.

$\frac{3}{4}$



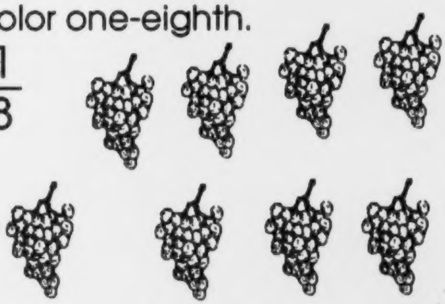
6. Sixty percent = three-fifths. Color three-fifths.

$\frac{3}{5}$



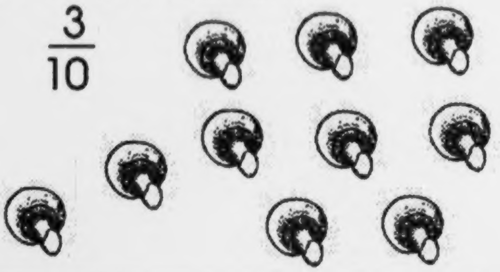
7. Color one-eighth.

$\frac{1}{8}$



8. Color three-tenths.

$\frac{3}{10}$



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Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Make wise food choices at snack time.
- Classify foods using a food grouping system.

ASSESSMENT CRITERIA

Classify a 24-hour dietary intake into the five food groups.

ACTIVITIES & STRATEGIES

This is Part 1 of a two-part lesson.

Review the nutrition requirements of children 6 years through 12 years (middle childhood).

- The energy needs of elementary school students vary widely.
- Elementary school students should eat at least the lower number of servings from each food group. Babies and preschool children should eat even smaller portions.
- Students should be encouraged to eat a variety of nutritious foods at mealtime and snack time in order to meet their daily nutritional needs for growth and development.
- Students of this age can learn to choose healthy foods. Snack foods may need to be monitored at this time because consumption of foods that have no nutritional value increases during this stage.

Distribute the handout, "Appendix C: A Pattern for Daily Food Choices."

Review the five food groups as well as the suggested daily servings and what counts as a serving. Ask students to name examples of foods in each food group.

Distribute and review the worksheet, "Foods I Ate." Tell students to record everything they eat or drink for a 24-hour period including snack foods. Emphasize to the students that they should record the approximate amount of each food eaten such as 2 slices whole wheat toast, 2 eggs, 4 chicken legs, and 2 glasses of milk. Foods which are not included in the five food groups should be classified as *Other Foods.*

Instruct students to compare their completed worksheet with "Appendix C: A Pattern for Daily Food Choices" recommendations. Ask them to evaluate their food habits and choices as they make suggestions for improvement.

RESOURCES & MATERIALS

Worksheet: "Foods I Ate"

Handout: "Appendix C: A Pattern for Daily Food Choices"

TEACHER TIP

Depending on when the lesson is presented, have students begin by recording in class what they ate for breakfast or lunch, so that questions can be answered or additional information given.

ESSENTIAL ELEMENT

Mathematics. Probability, statistics, and graphing. Use of probability and statistics to collect and interpret data. The student shall be provided opportunities to collect, record, and organize data into tables, charts, bar graphs, and line graphs.

NAME ______________________________ DATE ________________

Foods I Ate

In the chart below, for the next 24 hours, list everything you eat and drink. Record the approximate amounts of each food item. Place a mark in the column(s) under each food group to which the food item belongs.

			FOOD GROUPS					
	FOOD EATEN	AMOUNT	VEGETABLES	FRUITS	BREADS, CEREALS, RICE, & PASTA	MILK, YOGURT, & CHEESE	MEAT, POULTRY, FISH, DRY BEANS & PEAS, EGGS, NUTS, & SEEDS	OTHER
Example:	macaroni & cheese	1 cup			1	1		
	Total the Servings in Each Group							

Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Analyze daily food choices.
- Explain the role of nutrition and physical fitness in maintaining good health.

ASSESSMENT CRITERIA

- Analyze a twenty-four hour diet.
- Recognize a diet that has met the minimum suggested servings.

ACTIVITIES & STRATEGIES

This is part 2 of a two-part lesson.

Review with the students the handout, "Appendix C: A Pattern for Daily Food Choices." Using the completed worksheet, "Foods I Ate," from the prior lesson, tell the students to evaluate their own diets by completing the worksheet, "Analyze Your Diet."

Poll the class to find the food group(s) in which most of the students exceeded the minimum recommended servings. List on the board or overhead, in descending order of votes, each of the food groups in which the minimum recommendations were exceeded.

Poll the class to find out how many foods the students ate which were not listed in the five groups. Tell the other students to classify these as *Other Foods*.

Poll the class to find the food group(s) in which most of the students ate less than the minimum recommended servings. Instruct the class to brainstorm, and list on the board or the overhead, foods that the students like to eat that would help them get the minimum recommended servings for that food group.

Encourage students to eat more of the foods in the groups from which they did not eat the minimum recommended servings. It is important to eat a variety of nutritious foods at mealtime and snack time in order to meet the daily nutritional needs for growth and development.

Other Foods should be eaten in moderation and not in place of foods from the first five groups. Emphasize that *Other Foods* are usually foods that have little or no nutritional value.

RESOURCES & MATERIALS

Completed worksheet: "Foods I Ate"

Worksheet: "Analyze Your Diet"

Handout: "Appendix C: A Pattern for Daily Food Choices"

Overhead projector

ESSENTIAL ELEMENT

Mathematics. Probability, statistics, and graphing. Use of probability and statistics to collect and interpret data. The student shall be provided opportunities to collect, record, and organize data into tables, charts, bar graphs, and line graphs.

NAME ______________________________ DATE ________________

ANALYZE YOUR DIET

Color a square for each serving of food that you ate from each food group, as charted in the "Foods I Ate" worksheet. The shaded squares represent the minimum recommended servings, as outlined in "A Pattern for Daily Food Choices." Use the chart, "Foods I Ate," from the previous lesson to answer the questions below.

VEGETABLES	◢	◢	◢	◢	◢	◢				
FRUITS	◢	◢								
BREADS, CEREALS, RICE, & PASTA	◢	◢	◢							
MILK, YOGURT, & CHEESE	◢	◢								
MEAT, POULTRY, FISH, DRY BEANS & PEAS, EGGS, NUTS, & SEEDS	◢	◢	◢							
OTHER FOODS										
# of servings 0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

1. List the group(s) that you did not get the minimum recommended number of servings.

2. Name three foods that you enjoy from each of the food groups above which would enable you to meet the minimum requirements.

3. List three improvements that need to be made in your diet? Why?

LESSON OBJECTIVES

- Discuss nutritional needs of nine and ten year olds.
- Describe the relationship of food to energy, growth, and health.

ASSESSMENT CRITERIA

Identify portion sizes of various foods.

Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Define the term ***portion:***
The quantity of food served to a person; a serving; a helping.

Explain that students need recommended amounts of a variety of foods for growth, energy, strength, and good health.

Distribute and review the handout, "School Lunch Pattern Portion Sizes," with the students.

Display portions of various foods listed in the handout, using actual foods and measuring cups and spoons.

Instruct the students to complete the worksheet, "How Much Is A Portion?" After completion, review the answers with the class.

RESOURCES & MATERIALS

Worksheet: "How Much Is A Portion?"

Handout: "School Lunch Pattern Portion Sizes"

A set of the cardboard *Food Models* available from the National Dairy Council, 6300 North River Road, Rosemont, Illinois, 60018-4233 (708) 696-1860, Ext. 220

Measuring cups and spoons

Assorted portions of food such as:
1 medium size apple to = 3/4 cup
3/4 cup peas or green beans
1 medium carrot = 3/4 cup
1 bread slice
1/2 hamburger bun
2 ounce piece of cheddar cheese
1 egg
1/2 cup macaroni or rice
1/2 cup beans

ANSWER KEY

1. 3
2. 2
3. 8
4. 6
5. 2
6. 3

Ask the cafeteria manager to describe portion sizes served in the cafeteria (model tray).

ESSENTIAL ELEMENT

Mathematics. Experience in solving problems by selecting and matching strategies to given situations. The student shall be provided with opportunities to use charts and graphs.

NAME ______________________________ DATE ______________

HOW MUCH IS A PORTION?

Using the *School Lunch Pattern Portion Sizes* handout, circle the correct amount for one serving of the following items.

Milk	1/2 cup	2 cups	1 cup
Ice cream	1/2 cup	1 cup	1 1/2 cup
Cheddar cheese	1/2 ounce	2 ounce	1 1/2 ounce
Eggs	1 egg	2 eggs	3 eggs
Chicken	4 legs	1/2 breast	1 leg & 1 thigh
Peanut butter	1/2 cup	1 teaspoon	4 tablespoons
Hamburger bun	1/2 bun	1 whole bun	2 whole buns
Bread	1/2 slice	1 slice	2 slices
Rice	1/2 cup	1 cup	1 1/2 cup
Pancake	3/4 pancake	1 pancake	2 pancakes
Apple	1 medium	2 medium	3 medium
Dried apricots	3 medium	10 halves	20 halves
Grapes	1/2 cup	1 cup	3/4 cup
Green beans	3/4 cup	1 cup	1 1/2 cup
French fries	5 fries	10 fries	15 fries
Pinto beans	3/4 cup	1/2 cup	1 cup

Challenge:

1. How many cups of chocolate milk do you need for 3 servings? ______________
2. How many servings of bread are there in one sandwich? ______________
3. How many cups of macaroni are there in 4 servings? ______________
4. How many fresh apricots for 2 servings? ______________
5. How many grapefruits for 4 servings? ______________
6. How many baked potatoes for 3 servings? ______________

SCHOOL LUNCH PATTERN PORTION SIZES

MEAT GROUP

1 Ounce

1 egg
1/2 cup cooked dried beans, peas, lentils
2 tablespoons nuts or seeds
4 tablespoons peanut butter

2 Ounces

1/2 chicken breast or leg & thigh
1 medium pork chop, 3/4 inch thick
1 lean ground beef patty
A piece of meat or fish the size and thickness of a deck of cards

FRUITS and VEGETABLES

1 average size apple, apricot, banana, orange to = 3/4 cup
3/4 cup grapes, blueberries
3 medium fresh apricots
3/4 cup blackberries
3/4 cup canned fruit
3/4 cup canteloupe, honeydew, watermelon
1/2 medium grapefruit

3/4 cup for all vegetable with a few exceptions
3/4 cup boiled beans (black, kidney, lima, pinto)
1 potato, baked or boiled to = 3/4 cup
10 French fries
3/4 cup potatoes, mashed

BREADS and CEREALS

1 slice bread
1/2 bagel
1 biscuit, dinner roll, muffin
1/2 hamburger or hot dog bun
5-7 average crackers
1/2 English muffin

1/2 cup cooked cereal
3/4 cup dry cereal
1/2 cup cooked macaroni
1 average pancake or waffle
1/2 cup rice or grits
1 average taco shell or tortilla

MILK GROUP

1 cup milk, plain, buttermilk, chocolate
1/2 cup cottage cheese
2 ounces cheddar type cheese

1/2 cup ice cream
1 cup yogurt
1/2 cup custard or milk pudding

Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVES

- Make wise food choices as part of self-responsibility for health and wellness.
- Examine the effects of poor dietary habits.

ASSESSMENT CRITERIA

- Identify the problems related to sugar consumption.
- Measure individual daily intake of sugar.

ACTIVITIES & STRATEGIES

Explain to the students that, as with almost any one food, there is nothing wrong with sugar.

Problems arise when:
- too much sugar is eaten
- teeth are exposed to sugar over a length of time without being brushed

Point out that we need to be more concerned about foods that have sugar added rather than foods that contain natural sugars.
- Foods such as soft drinks, candy, desserts, ice cream, and some canned fruits and vegetables have sugar added.
- Natural sugars are found in fruit, milk, and vegetables which also contain vitamins, minerals, and other nutrients; therefore, these foods are a healthier choice.

Write the list of foods in the opposite column on the board. Ask the students to write down all the foods from the list that they have eaten in the last twenty-four hours. Tell them to record the sugar content of each food, and to remember that they are listed in single-serving form.

Instruct the students to total the sugar content eaten during one day.

Instruct students to take turns spooning out their individual totals of granulated sugar into a transparent cup. Then, add everyone's written total spoonfuls of sugar, and pour everyone's cup of sugar into a large, clear container to see the total amount of sugar consumed by the class.

Option: In front of the students make a red soft drink with 12 ounces carbonated water (club soda), 1 cup sugar, strawberry flavored extract, and food color. This shows students how much sugar is in a drink. Taste test. Discuss any problems that might arise from drinking this type of drink.

RESOURCES & MATERIALS

Measuring teaspoons
Small transparent plastic cups
A large transparent container
A two-pound bag of granulated sugar
If desired, to make the red soft drink:
12 ounces carbonated water (club soda)
1 cup sugar
Strawberry flavored extract
Red food color

SUGAR VIEW FOODS

Food	Sugar Content
Soft drink (12 oz.)	10 tsp.
Sweetened aid drink (8 oz.)	6 tsp.
Chocolate syrup (1 tbsp.)	3 tsp.
Chewing gum (2 sticks)	1 tsp.
Throat lozenge (2)	1 tsp.
Fruit flavored hard candy (2 pieces)	1 tsp.
Candy bar (1 oz.)	4 tsp.
Chocolate coated candies (pkg. of 31)	4 tsp.
Marshmallows (4 lg.)	5 tsp.
Catsup (1 tbsp.)	1 tsp.
Jelly (1 tsp.)	1 tsp.
Syrup (1 tbsp.)	3 tsp.
Fruit leathers (one)	3 tsp.

ESSENTIAL ELEMENT

Mathematics. Measurement. Concepts and skills using metric and customary units. The student shall be provided opportunities to solve application and nonroutine problems involving length, weight, time, and capacity.

Mathematics **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Analyze daily food choices.

ASSESSMENT CRITERIA

- Summarize the foods needed every day for a nutritionally balanced diet.
- Assess an individual's long-term needs of foods from the five food groups.

ACTIVITIES & STRATEGIES

Display a transparency of "Appendix C: A Pattern for Daily Food Choices."

Review the suggested daily servings of food from the five food groups.

Distribute and review the worksheet, "Nutrition Number Crunchers," by demonstrating one of the computations. Explain that the minimum daily requirements can affect the type and amount of food needed over an extended period of time.

Discuss how this information might affect the grocery shopping list for one week or seven days.

Instruct the students to complete the worksheet, "Nutrition Number Crunchers."

After completion, review the answers with the class.

RESOURCES & MATERIALS

Worksheet: "Nutrition Number Crunchers"

Transparency: "Appendix C: A Pattern for Daily Food Choices"

ANSWER KEY

1. 4, 6, 14
2. 12, 18, 42
3. 3, 6, 9, 21
4. 2, 4, 6, 14
5. 6, 12, 18, 42
6. 3, 6, 9, 21
7. 2, 4, 6, 14

ESSENTIAL ELEMENT

Mathematics. Problem solving. Experience in solving problems designed to systematically develop students' problem-solving abilities through a variety of strategies and approaches. The student shall be provided opportunities to develop an organized approach to solving application and nonroutine problems appropriate for grade four.

NAME ____________________ DATE ____________

Nutrition Number Crunchers

Daily Food Group Plan:
Vegetable Group: 3 servings
Fruit Group: 2 servings
Bread Group: 6 servings
Milk Group: 3 servings (for 9 &10 yr. olds)
Meat Group: 2 servings

1. If one needs 2 servings of meat in one day, how many servings are needed for:
   a. 2 days?
   b. 3 days?
   c. 7 days?

2. If you need 6 servings of breads and cereals for one day, how many servings are needed for:
   a. 2 days?
   b. 3 days?
   c. 7 days?

Fill in the chart:

	Food group	Servings needed for			
		1 Day	2 Days	3 Days	7 Days
3.	Vegetables				
4.	Fruits				
5.	Breads, Cereals, Rice, & Pasta				
6.	Milk, Yogurt, & Cheese				
7.	Meat, Poultry, Fish, Dry Beans & Peas, Eggs, Nuts, & Seeds				

LESSON OBJECTIVE

Discuss wise consumer food-buying skills.

ASSESSMENT CRITERIA

Demonstrate unit pricing to determine the best food buys.

ACTIVITIES & STRATEGIES

Stimulate an interest in unit pricing by asking the students the following or similar question: *Have you ever tried to compare the price of two products like cereal or juice when the boxes or cans were a different size?*

Define the term ***unit price.*** Answer: the cost per unit weight or measure. Unit prices can help you determine which product gives you the most for your money. Unit pricing helps you decide the best buy in terms of quantity, but does not help you decide the best buy in terms of quality.

Explain categories of units using the transparency, "Unit Prices."

- pound, ounce, gram, kilogram—units of weight that measure solid foods like meat, flour, sugar, cereals, vegetables, and fruits (fresh, canned, or frozen)
- pint, quart, gallon, fluid ounce, liter, and milliliter—units of volume that measure liquids, like milk, juice, catsup, and salad dressings
- price per item—for foods like eggs, ears of corn, and breakfast bars

Using the transparency, "Unit Prices," explain that unit pricing helps people to compare the prices of:

- different brands of the same item
- different sizes of packages of the same brand (Bigger is not always less expensive per unit.)
- different forms of a product: fresh, frozen, canned

Conduct a price comparison using two or three different sizes of packages of the same product. Write the price and number of units (weight) for each product on the board.

Explain the process to calculate unit price. (Total cost of the product divided by the number of units it contains.) Calculate on the board the unit price for each of the products listed.

Distribute and review the worksheet, "Find the Best Buy," and tell the students to complete it independently. Discuss the answers after everyone has completed the worksheet.

RESOURCES & MATERIALS

Worksheet: "Find The Best Buy"

Transparency: "Unit Prices"

Two or three packages of the same product in different sizes and the cost of each package

UNIT PRICES

Categories of Units

Units of weight which measure solid foods like meat, flour, sugar, cereals, vegetables, and fruits (fresh, canned, or frozen.)

- pound
- ounce
- gram
- kilogram

Units of volume which measure liquids like milk, juice, catsup, and salad dressing.

- pint
- quart
- gallon
- fluid ounce
- liter
- milliliter

Unit prices help you compare prices of:

- different brands of the same item
- different size packages of the same brand (Bigger is not always less expensive.)
- different forms of a product (fresh, frozen, or canned)

ANSWER KEY

1. 18¢, 20¢
2. 3¢, 5¢
3. 15¢, 5¢
4. 20¢, 12.5¢
5. 2¢, 5¢

In advance, arrange with the cafeteria manager to tour the cafeteria food storage area to observe packaging and weights of food, or ask cafeteria manager to prepare a cart of sample food packaging.

ESSENTIAL ELEMENT

Mathematics. Operations and computation. Use of manipulatives to develop the concepts of basic operations on numbers and to apply these concepts to the computational algorithms. The student shall be provided opportunities to solve division problems related to multiplication facts.

NAME ______________________ **DATE** ______________

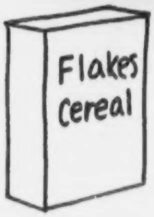
Find The Best Buy

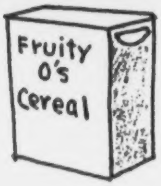
Find the unit price for each problem listed below. Circle the product with the lowest price per unit. Remember:

unit price = price ÷ weight

1\.

A
Healthy Flakes Cereal
14 oz.
$2.52





B
Fruity O's Cereal
10 oz.
$2.00

Unit price = ______ an ounce

Unit price = ______ an ounce

2\.

A
Corn
16 oz.
$.48

B
Frozen corn
8 oz.
$.40

Unit price = ______ an ounce

Unit price = ______ an ounce

3\.

A
Quickie Oatmeal Packet
1 oz.
15¢

B
Regular Oatmeal
18 oz.
90¢

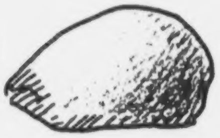
Unit price = ______ an ounce

Unit price = ______ an ounce

4\.

A
Shaved Ham
32 oz.
$6.40

B
Whole Ham
64 oz.
$8.00



Unit price = ______ an ounce

Unit price = ______ an ounce

5\.

A
Milk
1 gallon
128 fl. oz.
$2.56

B
Milk
1 pint
16 fl. oz.
80¢

Unit price = ______ an ounce

314

Unit price = ______ an ounce

Science **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Identify the functions of the nutrients as they relate to growth and health.

ASSESSMENT CRITERIA

- Describe the function of carbohydrates (sugars and starches) in the body.
- Read food labels to determine the amount of carbohydrates in selected foods.

ACTIVITIES & STRATEGIES

Write the word ***carbohydrates*** on the board. Lead a class discussion on the functions of carbohydrates in the body. Carbohydrates are nutrients that supply energy for body functions. People need energy to:
- run, walk, or do any kind of activity
- keep muscles, brain, heart, stomach, and other organs working properly

Carbohydrates turn into glucose which is used by the body for energy. Each cell contains the ***mitochondria*** that burn glucose to release heat and energy.

Starch is a carbohydrate composed of a chain of sugar molecules. Foods high in starch include potatoes, whole-grain products, and beans.

Demonstrate the presence of starch in food samples by putting a drop of iodine on the food. A purple color indicates the presence of starch.

Explain how and where to find the amount of carbohydrate by reading the nutrition information on the label of a can or a box of food.

Divide the class into groups of three or four students. Give each group a can or a box of food with a food label that contains nutrition information. Tell students to find the number of grams of carbohydrates in one serving of the food and record it on the worksheet, "Energy from Carbohydrates."

Allow students to exchange boxes or cans to determine which food item has the highest and lowest amounts of carbohydrates.

RESOURCES & MATERIALS

Worksheet: "Energy From Carbohydrates"

"Getting To Know Your Heart," American Heart Association Schoolsite Program, Upper Elementary

Iodine and eyedropper

At least ten cans and boxes of different packaged foods with nutrition information on the labels

Food samples such as potatoes, grain products, fruits, and vegetables

****CAUTION**** **Iodine is poisonous. Ingestion may be fatal.**

TEACHER TIP

Prior to this lesson, ask students to bring empty cans or boxes of food items with the labels attached to be used during this activity.

ESSENTIAL ELEMENT

Science. Apply defined terms based on observations. The student shall be provided opportunities to apply knowledge of theories, facts, and concepts in explaining observations in experimental and controlled situations.

NAME ______________________ DATE ______________

Energy
from Carbohydrates

Directions:

- *Make a list of 10 foods from cans or boxes.*
- *Read the labels to determine the amount of carbohydrates in one serving.*
- *Record the amount in grams on the chart below.*
- *Compare the amounts.*
- *Circle the food with the most carbohydrates.*
- *Draw a box around the food with the least amount of carbohydrates .*

Food Item	Grams of Carbohydrates
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

LESSON OBJECTIVE

Identify the functions of nutrients as they relate to growth and health.

ASSESSMENT CRITERIA

- Explain the importance of vitamin C in the body.
- Demonstrate the usefulness of vitamin C in preserving food color.

Science **Grade 4**

4

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Ascorbic acid (vitamin C) helps the body:
- fight infection
- heal wounds
- form and maintain collagen
- absorb iron and calcium

A lack of Vitamin C can result in:
- bleeding gums and scurvy
- anemia
- frequent infections

When certain foods are exposed to oxygen, they change color; vitamin C is often added to foods to help stop this color change. This investigation demonstrates how vitamin C helps food keep its natural color.

The students should follow the steps of the scientific method.
- Question: How does vitamin C preserve food color?
- Hypothesis: Let students make their guesses.
- Materials: Listed in the opposite column
- Procedure:
  1. Dissolve one tablet of 250 milligrams of vitamin C in one cup of water.
  2. Peel and slice a peach.
  3. Place half the slices on each of two plates.
  4. Brush one group of slices with the vitamin C solution and the other group with water.
  5. Allow air exposure for several hours.
  6. Repeat the procedure with a banana, an apple, and/or a potato.
- Observation: Record what is seen on the worksheet, "Preserving Color in Foods."
- Conclusion: Students state whether their hypotheses were correct or incorrect.

Discuss how vitamin C affects the preservation of color in foods.

RESOURCES & MATERIALS

Worksheet: "Preserving Color in Foods"

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

Knife
Measuring cup
Spoon for stirring
Plates
Pastry brush
250 milligram Vitamin C tablets
Water
Peach
Potato
Banana
Apple

TEACHER TIP

Vitamin C acts as a preservative when used as an antioxidant to minimize the destructive effect of oxygen and metals. Vitamin C is often added to cured meats like bacon to reduce the amount of *nitrosamines* (cancer-agents formed from nitrates and nitrites) in the food.

ESSENTIAL ELEMENT

Science. Acquire data through the senses. The student shall be provided opportunities to observe phenomena resulting from the life, earth, and physical sciences.

NAME ______________________________ **DATE** ______________

Preserving Color in Foods

Question: ***How does vitamin C affect the color of food?***

Hypothesis: *(Make a guess.)*

____

Materials:
- 250 milligram tablets of Vitamin C
- measuring cup
- spoon for stirring
- peach, potato, banana, apple
- knife, plates, pastry brush, water

Procedure:
1. Dissolve one 250 milligram tablet of vitamin C in one cup of water.
2. Peel and slice a peach.
3. Place half the slices on each of two plates.
4. Brush one group of slices with the vitamin C solution and the other group with water.
5. Allow air exposure for several hours.
6. Repeat the procedure with a potato, banana, and/or an apple.

Observation: *(Record what you see.)*

____

____

____

FOOD ITEMS	EFFECTS OF BEING BRUSHED WITH WATER ONLY	EFFECTS OF BEING BRUSHED WITH VITAMIN C SOLUTION
peach		
potato		
banana		
apple		

Conclusion: *(Was your hypothesis correct?)*

____

Science **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explain the importance of safe handling of food.

ASSESSMENT CRITERIA

Observe and record the changes of food items that are not handled properly.

ACTIVITIES & STRATEGIES

Discuss food-borne illnesses (see Instructor's Resource Guide for background information).

Divide the students into groups and let each group choose a different food, do the investigation, and report on the results.

Set up a classroom investigation to observe the effects of contamination on food.

1. Instruct each group to place their food in three jars.
2. Have them seal the jars and label them, *Jar 1*, *Jar 2*, and *Jar 3*.
3. Place one jar in a sunny area, one jar in a refrigerator, and one jar in a warm area.
4. Tell students to hypothesize what will happen to each food.
5. Continue the experiment for one week. Each day, students should record their observations on their observation charts.
6. Discuss the results at the conclusion of the experiment.
7. Discuss what can happen to other foods which have not been stored properly. Brainstorm ways in which the shelf life of foods can be extended.

RESOURCES & MATERIALS

Handout: "Food Storage Observation Chart"

"Instructor's Resource Guide for Teaching Nutrition Education" found in the introductory section of *ESR IV*

3 jars for each group
Oranges (slightly bruised)
Peaches
Strawberries
Cucumber
Cheese

In advance, invite the cafeteria manager to lead a class tour of the cafeteria and to explain food storage and handling techniques.

ESSENTIAL ELEMENT

Science. Communicate data and information in appropriate oral and written form. The student shall be provided opportunities to describe changes that occur to objects and organisms in the environment.

NAME ______________________________ **DATE** ________________

FOOD STORAGE
Observation Chart

Directions: Fill in the chart daily as you observe what happens to the foods.

DAY	DATE	JAR 1	JAR 2	JAR 3
1				
2				
3				
4				
5				
6				
7				

Conclusion:

____

____

____

____

____

TEXAS EDUCATION AGENCY
ESR IV

Social Studies **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Discuss family food preferences.

ASSESSMENT CRITERIA

- Examine facts that influence eating habits.
- Conduct a food interview.

ACTIVITIES & STRATEGIES

Tell the students that they will look more closely at the factors that influence what they eat. They will also learn how to start heading toward healthier eating.

Discuss how students can make changes in their eating habits.
- Change is not easy for anyone, students or adults.
- Be aware of all the external and internal factors that influence our food choices such as what we usually eat, when and where we eat it, and how we feel when we eat it .
- It is best to begin with small changes.
- Some things can make it hard to change, even when you really want to; for example, it would be difficult to change the foods your family eats.
- It is important to know the things that are hard to change, and think of ways to deal with them.

Tell the students to brainstorm some ways of making future changes towards better health.

Explain that the students are going to interview an adult family member about food and eating. Point out that they will want to learn as many interesting facts as possible because they will use the information in the interviews to write an essay.

List on the board the "Interviewer's Tips" in the opposite column, as you discuss them with the students.
- Include their suggestions on the list.
- Answer any questions or concerns.

Distribute the handout, "The Interview." Read and discuss the questions with the class. After the interview, tell the students to write an essay based on the results of the interview.

Adapted from:
"Changing the Course: Upper Elementary Curriculum," American Cancer Society, pp. 95-102.

RESOURCES & MATERIALS

Handout: "The Interview"

"Changing the Course: Upper Elementary Curriculum," American Cancer Society

Interviewer's Tips:
- Have fun and relax.
- Read the questions to yourself before the interview.
- Listen carefully to the person's answers.
- Take notes for your use. They do not have to be neat as long as you can understand them.
- Do not hesitate to ask the person to repeat their answer more slowly as you write it. This will let them know their answer is important to you.
- Remember to thank the person being interviewed.
- Immediately after the interview, read your notes and fill in details before you forget them.
- Be sure to send the person a copy of the article you write about the interview.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe how traditions, customs, folkways, and religious beliefs differ among individuals and groups.

NAME ______________________________ **DATE** ______________

The Interview

Ask an adult family member the following questions. Use a separate piece of paper to record their answers.

Name: ______________________________

1. How many people live in your house, and who are they?
2. Who cooks most of the meals in your house?
3. How often do you eat out?
4. How often does the family eat out?
5. Does everyone in your house like to eat the same foods?
6. How does your family deal with different food likes and dislikes?
7. Does your family often sit down and eat together, or do people mostly eat when they feel hungry?
8. What are some of your favorite foods?
9. Have your favorite foods changed much over the years?
10. What foods do you like now that you didn't like when you were younger?
11. Have you ever tried to change your eating habits? (Gone on a diet to lose or gain weight? Tried to cut down on some foods or eat more of others?) Please tell me about one time you tried to make an eating change.
12. What things helped you change your eating habits?
13. What things got in the way of changing your eating habits?

LESSON OBJECTIVES

- Explore new foods in each food group.
- Discuss family food preferences.
- Examine food traditions.

ASSESSMENT CRITERIA

- Identify the influences of ethnic background, food preferences, and social customs on food choices.
- Classify foods into food groups.
- Recognize foods from different backgrounds.

ACTIVITIES & STRATEGIES

Make six columns on the board or overhead and write the food groups at the top of each column as outlined in "Appendix C: A Pattern for Daily Food Choices." Label the sixth column, *Other Foods.*

The food choices people make are influenced by their culture which includes ethnic background, food preferences of families, and social and religious customs.

Present the information about culture from the opposite column to the class.

Explain to the students that everyone makes food choices daily. Using the foods listed in the various food groups, point out that many different types of food provide the nutrients needed for energy and growth. We can learn to appreciate the foods that other people enjoy who have backgrounds and preferences different from our own.

Ask the students to volunteer to bring a favorite nutritious food item from home to share with the class. Put a label in front of each food item with the name of the food on it. Conduct a tasting party and encourage every student to taste each of the foods.

Allow the students to describe what they like about each food item. Redirect negative comments made by students concerning the foods they tasted by pointing out some positive aspects such as nutrient value, color, and availability.

RESOURCES & MATERIALS

"Appendix C: A Pattern for Daily Food Choices"

Items for tasting party:
Paper plates
Napkins
Plastic ware
Serving utensils

Teacher information about culture:

- Ethnic Background.
  Explain that immigrants brought many different food customs which have been incorporated into Texas culture. Ask the students to name some ethnic foods and write them in the correct food group.
- Food Preferences.
  Why do you eat the foods you eat? The foods served at home affect your food preferences. If you have been given a wide variety of foods at home, you may be more willing to try new foods and enjoy a greater variety of foods. Ask students to name some favorite nutritious foods. List each food named in the correct food group.
- Social Customs.
  Ask the students to name a traditional holiday or occasion celebrated in their home and then name a food that they associate with each of the occasions. Write the food in the appropriate food group.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe how traditions, customs, folkways, and religious beliefs differ among individuals and groups.

LESSON OBJECTIVE

Develop an appreciation for foods from different cultural groups.

ASSESSMENT CRITERIA

- Recognize the important role of pasta in the diet.
- Identify the various types of pasta.

Social Studies **Grade 4**

4

TEXAS EDUCATION AGENCY

ACTIVITIES & STRATEGIES

Instruct a student to look up ***pasta*** in the dictionary and read the definition to the class. Expand the definition by explaining the following information. Pasta is the term for all macaroni and noodle products. Pasta products are made from semolina flour which is high in protein. It is produced from a special variety of wheat called durum wheat which gives pasta its characteristic nutty flavor and firm shape. Pasta is included in the bread and cereal group and provides B vitamins and complex carbohydrates.

Brainstorm with the class the different types and shapes of pasta and write them on the board. Answers could be macaroni, spaghetti, noodles, vermicelli, ravioli, shells, ribbons, bows stars, tubes, strings, rings, straight, rippled, curled, grooved, and bent or twisted.

Present the following information to the class:

> Italy, like America and many other large countries, has different food customs depending on the region of the country. Americans are most familiar with pasta, the cuisine of southern Italy. Italians consume approximately 60 to 70 pounds of pasta per person each year. There are over 1,000 different shapes of pasta available in Italy.
>
> Pasta was supposedly introduced in the United States by Thomas Jefferson during his presidency from 1801-1809. He enjoyed pasta so much on a trip to Naples, Italy that he brought crates of it back to the United States. Pasta was first produced commercially in the United States in the 1800s but did not become a significant part of the American diet until this century. There are over 300 shapes of pasta available in the United States.

Pasta can be categorized into four general types. Define and show the students samples of each type of pasta. (See *Types of pasta* in the opposite column.)

Distribute and review the worksheet, "Plenty of Pasta," with the students. Discuss the answers after everyone has completed the worksheet.

RESOURCES & MATERIALS

Worksheet: "Plenty of Pasta"

Assorted types and shapes of pasta

Types of pasta:

- Hollow pasta (tubes) —macaroni, manicotti, cannelloni
- Long, thin pasta (rods)—spaghetti and vermicelli
- Flat pasta (ribbonlike strips)—lasagne, noodles, green noodles, and fettuccine
- Decorative pasta—shells, bows, spirals, stars, alphabets

ANSWER KEY

1.	D	6.	H
2.	B	7.	G
3.	E	8.	I
4.	J	9.	F
5.	C	10.	A

TEACHER TIP

Ideas to enhance the lesson:

- **Have a demonstration of making pasta.**
- **Have a tasting party, trying different types of pasta.**
- **Make a pasta collage, using different types and shapes of pasta.**
- **Coordinate this lesson with a day the school menu includes pasta.**

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe how traditions, customs, folkways, and religious beliefs differ among individuals and groups and describe the influence of other cultures on Texas.

NAME ______________________________ **DATE** ________________

PLENTY OF PASTA

Listed below are pictures and a description of pasta. Write the letter of each pasta in the blank next to its corresponding description.

____ *1. Spaghetti—long, thin strings of pasta*

____ *2. Macaroni—short, curved tubes of pasta*

____ *3. Manicotti—long, broad tubes of pasta*

____ *4. Lasagne—wide, flat strips of pasta*

____ *5. Vermicelli—thin strings of pasta like spaghetti*

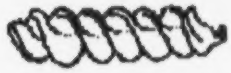
____ *6. Noodle—a flat, narrow strip of pasta made with egg*

____ *7. Fettuccine—long, narrow, flat strips of pasta*

____ *8. Tortellini—small, ring-shaped pasta*

____ *9. Ravioli—small, square casings of pasta*

____ *10. Rotini—spiral strips of pasta*

A.


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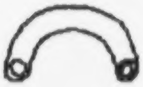

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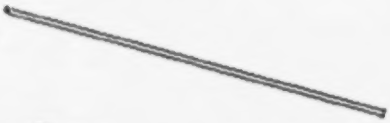

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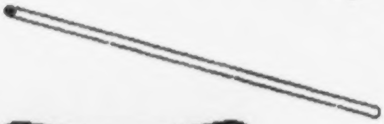

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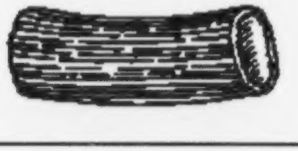

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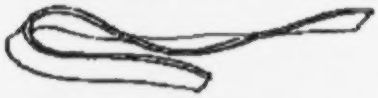

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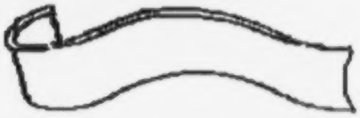

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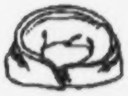

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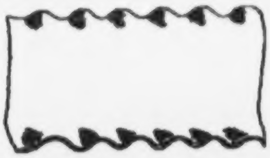


Social Studies **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Explore food from different cultures and categorize them using a food grouping system.

ASSESSMENT CRITERIA

Identify the grains and breads used by different cultures.

ACTIVITIES & STRATEGIES

List the following ingredients on the board:
- flour
- water
- salt
- oil or shortening
- yeast
- baking powder

Ask the students to brainstorm food items that contain the listed ingredients. Examples of answers include tortillas, pasta, Matzoh, dumplings, scones, crackers, pita bread, pizza crust, pie crust, biscuits, chow mein noodles, bagels, and egg roll wrappers.

Explain that different cultural groups use various grains to make flour which is then used to make many different kinds of bread items.

Divide students into pairs to research and prepare a chart that lists a grain, the type of bread made from this grain, and the culture that uses this bread. The following is an example of the chart.

GRAIN	BREAD TYPE	CULTURE
corn	corn tortilla	Mexican
wheat	pizza crust	Italian

Give the students one or two days to complete this activity. Have students share their research with the class. Emphasize the ethnic group or cultural origin of each food item.

RESOURCES & MATERIALS

Research material in the library

In advance, ask the cafeteria manager and/ or the bread baker to help students make bread and bake it in the cafeteria ovens.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe how traditions, customs, folkways, and religious beliefs differ among individuals and groups, and describe the influence of other cultures on Texas.

Social Studies **Grade 4**

4

TEXAS EDUCATION AGENCY

LESSON OBJECTIVE

Analyze the customs of French, Irish, and Italian cultures.

ASSESSMENT CRITERIA

- Locate Ireland on a world map.
- Examine the food customs of the Irish Texans.
- Classify foods into food groups.

ACTIVITIES & STRATEGIES

Display pictures around the room of Ireland's green landscapes. Ask students if they have heard the term, *Luck o' the Irish?* Tell the students that they are going to learn about the food customs of the Irish.

Ask a student to locate Ireland on a world map. Point out to the students that Ireland is commonly known as the *Emerald Isle* because it is an island of rich green farm and pasture lands.

Using the recipe on the handout, demonstrate making Irish Dark Soda Bread. While the bread is baking, present the Irish Texans portion of the "French, Irish, and Italian Americans in Texas" resource material found at the beginning of the fourth grade level *ESR IV* lesson plans. Include the following additional material:

> Over 40 million Americans claim to be Irish descendants. The Irish have made many contributions in the United States. The contributions include Waterford crystal, Irish linen, Irish stew, and racehorses. Leprechauns and shamrocks are associated with Irish folklore.
>
> Fishing is one of Ireland's largest industries, and seafood is an important part of the diet. Potatoes have been the mainstay of the Irish diet. The versatile potato is boiled, mashed, fried, and used in soups, stews, breads, rolls, and cakes. Cabbage, carrots, onions, turnips, and cauliflower are other vegetables grown in the rich Irish soil. Beef is used in economical dishes like corned beef and cabbage. Irish stew is made of pieces of lamb and potatoes in a hearty gravy. Soda bread, brown bread, and soda scones are favorite breads of the Irish.

Name each of the foods listed in the paragraph above and ask the students to categorize those foods according to the five food groups outlined in, "Appendix C: A Pattern for Daily Food Choices."

Slice the freshly baked bread and give the students the opportunity to taste it. Distribute the handout, "Irish Soda Bread," for students to take home.

RESOURCES & MATERIALS

Handout: "Irish Dark Soda Bread"

"French, Irish, and Italian Americans in Texas" found at the beginning of the fourth grade *ESR IV* lesson plans

"Appendix C: A Pattern for Daily Food Choices"

World map
Pictures of Ireland's landscape
Equipment:
Measuring cups
Measuring spoons
Large mixing bowl
Wooden spoon
Baking sheet
Oven
Ingredients for Irish Dark Soda Bread:
3 cups all-purpose flour
2 cups whole-wheat flour
2 teaspoons baking soda
1 tablespoon baking powder
2 tablespoons brown sugar
2 1/4 cups buttermilk

In advance, ask permission of the cafeteria manager to use the cafeteria oven at a time which is convenient for the cafeteria staff.

ESSENTIAL ELEMENT

Social studies. Psychological, sociological, and cultural factors affecting human behavior. The student shall be provided opportunities to describe how traditions, customs, folkways, and religious beliefs differ among individuals and groups and describe the influence of other cultures on Texas.

NAME ______________________________ **DATE** ______________

Share this recipe with your family and tell them about your experience at school making and tasting . . .

IRISH DARK SODA BREAD

3 cups all-purpose flour
2 cups whole-wheat flour
2 teaspoons baking soda
1 tablespoon baking powder
2 tablespoons brown sugar
2 1/4 cups buttermilk

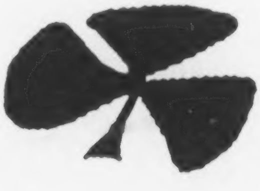
Preheat oven to 400°.

Add all of the dry ingredients in a large bowl and mix well. Make sure to break up any lumps of brown sugar. Pour all of the buttermilk into the bowl at once and stir with a wooden spoon just until a soft dough is formed. Do not try to make it smooth at this point. Pour the contents of the bowl out onto a clean, plastic counter and knead for a minute or so until everything comes together.

Divide the dough into two portions, shape each portion into a round loaf, and press the top down a bit to just barely flatten it. Place the loaves on a large ungreased, nonstick baking sheet. Sprinkle some additional flour and make an *X* on top of each loaf with a sharp paring knife.

Allow the loaves to rest for 10 minutes, and then bake on the middle rack of the oven for 45 minutes, or until the loaves are brown.

Cool on racks.



Appendix A
Suggested Teacher Resources

Books

American Heart Association Cookbook. 5th ed. Dallas: American Heart Association, 1991.

Archer, G.A., Psy.D. *Big Kids: A Parent's Guide to Weight Control for Children.* Oakland: New Harbinger Publications, Inc., 1989.

Avis, J.B., L.D.N., R.D., and Ward, K.F., L.D.N., R.D. *Just for Kids Cookbook.* West Monroe, LA: Central Printers and Publishers, 1990.

Benardot, D., Ph.D., R.D. *Four Steps to Less Fat and Better Nutrition.* Normal, IL: The Salonika Press, 1983.

Boskind-White, M., Ph.D., and White, Jr. W.C., Ph.D. *The Binge/Purge Cycle.* 2nd ed. New York, NY: Norton, 1987.

Cooper, N., R.D. *The Joy of Snacks.* Minnetonka, MN: DCI Publishing, 1991.

Eisenman, P.A., Ph.D., Johnson, S.C., Ph.D., and Benson, J.E., M.S. *Coaches Guide to Nutrition and Weight Control.* Champaign, IL: Leisure Press, 1990.

Franz, M.J., M.S., R.D. *Fast Food Facts.* Minnetonka, MN: DCI Publishing, 1990.

Gershoff, S., Ph.D., and Whitney, C. *The Tufts University Guide to Total Nutrition.* New York: HarperPerennial, 1990.

Grundy, S., M.D., Ph.D. *American Heart Association Low-Fat Low-Cholesterol Cookbook: An Essential Guide for Those Concerned about Their Cholesterol Levels.* New York: Random, 1989.

Hall, L., and Cohn, L. *Bulimia: A Guide to Recovery.* Carlsbad, CA: Gurze Books, 1986.

Hess, M.A., M.S., R.D., Hunt, A.E., and Stone, B.M. *A Healthy Head Start: A Worry-free Guide to Feeding Young Children.* New York: Henry Holt and Company, 1991.

Hirschmann, J.R., and Munter, C.H. *Overcoming Overeating.* New York: Fawcett, 1988.

Jacobson, M.S., Ph.D., and Hill, L., R.D. *Kitchen Fun for Kids.* New York: Henry Holt and Company, 1991.

Linsay, A. *The American Cancer Society Cookbook: A Menu for Good Health.* New York: Hearst Books, 1988.

Manahan, L., M.S., M.Ed., R.D. *The Adventures of Superbean and the Good Food Friends.* Walla Walla, WA: Yummy Designs, 1988.

Manahan, L., M.S., M.Ed., R.D. *The Good Food Puppets Come Alive!* Walla Walla, WA: Yummy Designs, 1990.

Mellin, L., M.A., R.D. *Shapedown: Weight Management Program for Adolescents.* San Francisco: Balboa Publishing, 1983.

Mond, A., R.D., and Franz, M.J., M.S., R.D. *Convenience Food Facts.* Minnetonka, MN: DCI Publishing, 1987.

Niethammer, C. *American Indian Food and Lore.* New York: Collier Books, Macmillan Publishing Company, 1974.

Pennington, J., Ph.D., R.D. *Bowes and Church's Food Values of Portions Commonly Used.* Philadelphia: J.B. Lippincott Company, 1989.

Romaniello, C., M.P.H., R.D., and Van Domelen, N. *Off to a Good Start.* Englewood, CO: Wildwood Resources Publishing, 1989.

Sacker, I.M., M.D., and Zimmer, M.A., Ph.D. *Dying to Be Thin.* New York: Warner Books, Inc., 1987.

Satter, E., M.S., R.D. *Child of Mine: Feeding with Love and Food Sense.* Menlo Park, CA: Bull Publishing Company, 1986.

Satter, E., R.D., A.C.S.W. *How to Get Your Kid to Eat...But Not Too Much.* Palo Alto, CA: Bull Publishing Company, 1987.

Smith, J. *The Frugal Gourmet on Our Immigrant Ancestors.* New York: William Morrow and Company, Inc., 1990.

Stanush, B.E. *Texans: A Story of Texas Cultures for Young People.* San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1988.

Stark, R.D., M.D., and Winston, M., Ed.D., R.D. *American Heart Association Low-Salt Cookbook: A Complete Guide to Reducing Sodium and Fat in the Diet.* New York: Random, 1990.

Stein, P.M., R.D., and Unell, B. *Anorexia Nervosa: Finding the Lifeline.* Minneapolis: CompCare, 1986.

Tannahill, R. *Food in History.* New York: Crown Publishers, Inc., 1988.

The American Diabetes Association/The American Dietetic Association Family Cookbook. Vol. IV. New York: Prentice Hall, 1991.

The Danish Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The English Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The German Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The Irish Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The Japanese Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The Melting Pot. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1989.

The Polish Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

The Wendish Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987.

Tribole, E., M.S., R.D. *Eating on the Run.* Champaign, IL: Human Kinetics, 1987.

Valette, B. *A Parent's Guide to Eating Disorders.* New York: Walker Publishing Company, 1988.

Visser, M. *Much Depends on Dinner.* New York: Collier Books, Macmillan Publishing Company, 1986.

Warner, P. *Healthy Snacks for Kids.* San Jacinto, CA: Bristol Publishing Company, 1989.

Zeller, P., and Jacobson, M.F., Ph.D. *Eat, Think, and Be Healthy!* Washington, DC: Center for Science in the Public Interest, 1987.

Pamphlets

The Texians and the Texans. San Antonio: The University of Texas Institute of Texan Cultures at San Antonio, 1987. A series of pamphlets dealing with the many peoples who have contributed to the history and heritage of Texas which include the following:

The Afro-American Texans
The Belgian Texans
The Chinese Texans
The Czech Texans
The German Texans
The Greek Texans
The Indian Texans
The Italian Texans
The Jewish Texans
The Mexican Texans
Los Tejanos Mexicanos (Spanish version)
The Norwegian Texans
The Spanish Texans
The Swiss Texans

Curriculum Kits

Food...Early Choices. Rosemont, IL: National Dairy Council, 1988.

Food Helps Me Grow, Grade 1. Rosemont, IL: National Dairy Council, 1988.

Food Gives Me Energy, Grade 2. Rosemont, IL: National Dairy Council, 1988.

Food Keeps Me Healthy, Grade 3. Rosemont, IL: National Dairy Council, 1988.

Food in America, Grade 4. Rosemont, IL: National Dairy Council, 1988.

Food and Technology, Grade 5. Rosemont, IL: National Dairy Council, 1988.

Food Decisions, Grade 6. Rosemont, IL: National Dairy Council, 1988.

Smart Moves, Grades 7-12. Rosemont, IL: National Dairy Council, 1991.

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Videos

The following videos are available from the NET library at the following address:

Nutrition Education and Training Program
Texas Department of Human Resources
The Library 434-W
701 West 51st Street
P.O. Box 2960
Austin, Texas 78769
(512) 450-3530

Anorexia Nervosa: The Covert Rebellion gives an overview of the problem of anorexia nervosa, the psychology of eating, parent-child relationships, and distorted self-image. Appropriate for high school students.

Be Fair to Your Food tells how to protect food from unnecessary loss of nutrients through proper shopping, storing, and cooking. Appropriate for junior high and senior high school students.

Be Healthy, Be Happy emphasizes health rules of keeping clean, eating proper foods, getting enough rest and exercise, and taking care of yourself when you are sick and also shows the relationship of proper eating habits to staying healthy. Appropriate for prekindergarten through grade 3.

Bloodstream explores the role of arteries, veins, capillaries, nutrition, and the heart in the process of blood circulation. Appropriate for junior high and senior high school students.

Bulimia: Out of Control Eating discusses bulimia as a life threatening eating disorder. Appropriate for junior high and senior high school students.

Chef Good Munch Series uses puppets and humor to promote learning and induce positive changes in children's attitudes about vegetables. Appropriate for kindergarten through grade 4.

Cholesterol: What You Can Do discusses the link between a high blood cholesterol level and heart disease and provides information on cholesterol, lipoproteins, plaque build-up in arteries, and types of fat. Appropriate for grades 6 through 12.

Fast Food: What's in It for You gives information on nutrient content of fast foods and healthful alternatives. Appropriate for upper elementary, junior high, and senior high school students.

Fear of Fat: Dieting and Eating Disorders discusses eating disorders, including anorexia nervosa, compulsive overeating, and bulimia. Appropriate for grades 6 through 12.

Feeding shows the actual process of the human digestive system, beginning with food entering the mouth and ending with waste elimination. Appropriate for junior high and senior high school students.

Food and Growth introduces the concept that growth occurs by cell division and that food reaching the cells is necessary. Appropriate for grades 4 through 8.

Food Energy and You explains how the body uses energy and how food is a source of energy. Appropriate for grades 6 through 12.

Food: Keep It Safe to Eat presents basic information on food safety such as proper shopping methods, kitchen hygiene, safe defrosting, and food preparation tips. Appropriate for grades 6 through 12.

Health: Food and Nutrition covers the basics of proper nutrition and the importance of major nutrients. Appropriate for elementary school students.

Lunchroom Etiquette is filmed in an elementary school lunchroom and asks children to discuss their lunchtime environment and make suggestions for improvement. Appropriate for elementary school students.

Supermarket Savy covers techniques for wise consumer buying to enable students to learn how to get the most nutritious food for their money. Appropriate for upper elementary and middle school students.

Time for Table Manners uses Disney animation to show young children how to eat meals using good manners; includes washing before eating, setting the table, using eating utensils, cleaning up, and saying "please" and "thank you." Appropriate for grades 4 through 8.

Your Diet discusses carbohydrates, exercise, fats, fiber, salt/hypertension, and water. Appropriate for grades 6 through 12.

Appendix B
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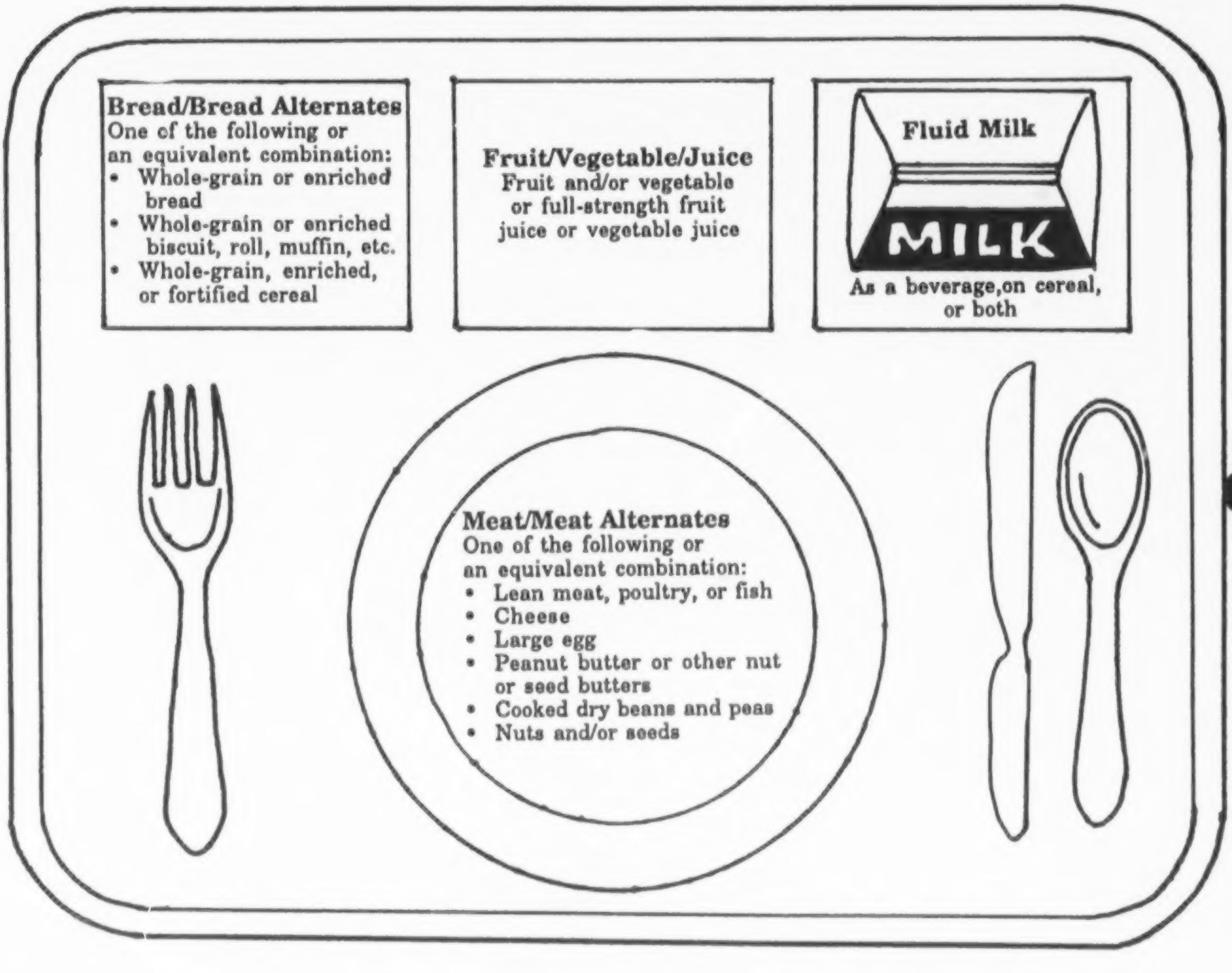
Appendix C: A Pattern for Daily Food Choices

FOOD GROUPS	SUGGESTED DAILY SERVINGS	WHAT EQUALS A SERVING?
Vegetables • Dark green leafy • Deep yellow • Starchy • Other vegetables	**3 - 5** servings from entire group (Include all types regularly; use dark green leafy vegetables and deep yellow vegetables several times a week.)	▲ 1/2 cup of cooked vegetables ▲ 1/2 cup of chopped raw vegetables ▲ 1 cup of leafy raw vegetables, such as lettuce or spinach
Fruits • Citrus, melon, berries • Other fruits	**2 - 4** servings from entire group	▲ a whole fruit such as a medium apple, banana, or orange ▲ a grapefruit half ▲ a melon wedge ▲ 3/4 cup of juice ▲ 1/2 cup of berries ▲ 1/2 cup cooked or canned fruit ▲ 1/4 cup dried fruit
Breads, Cereals, Rice, and Pasta • Whole-grain • Enriched	**6 -11** servings from entire group (Include several servings of whole-grain products daily.)	▲ 1 slice of bread ▲ 1/2 hamburger bun, English muffin, or bagel ▲ a small roll, biscuit, or muffin ▲ 3 to 4 small or 2 large crackers ▲ 1/2 cup cooked cereal, rice, or pasta ▲ 1 ounce of ready-to-eat breakfast cereal ▲ 1 tortilla or pancake
Milk, Yogurt, and Cheese	**2** servings for adults **3** servings for children **4** servings for ages 11-24 (3 servings for women who are pregnant or breast-feeding and for teens; 4 servings for teens who are pregnant or breast-feeding)	▲ 1 cup of low-fat milk ▲ 8 ounces low-fat yogurt ▲ 1 1/2 ounces of low-fat natural cheese ▲ 2 ounces low-fat process cheese
Meat, Poultry, Fish, Dry beans and Peas, Eggs, Nuts, and Seeds	**2 - 3** servings from entire group (Include dry beans and peas often.)	▲ 2 - 3 ounces equals one serving of cooked lean meat, poultry, or fish. Count 1 egg, 1/2 cup cooked dried beans, or 2 T. peanut butter as 1 ounce of meat.

Adapted from: "Nutrition and Your Health: Dietary Guidelines for Americans," United States Departments of Agriculture and Health and Human Services, U.S. Government Printing Office, 1750 K Street, N. W., Washington, DC, 20006, 1990.

Appendix C

The School Breakfast Pattern



Bread/Bread Alternates
One of the following or
an equivalent combination:
- Whole-grain or enriched bread
- Whole-grain or enriched biscuit, roll, muffin, etc.
- Whole-grain, enriched, or fortified cereal

Fruit/Vegetable/Juice
Fruit and/or vegetable or full-strength fruit juice or vegetable juice

Fluid Milk

As a beverage, on cereal, or both

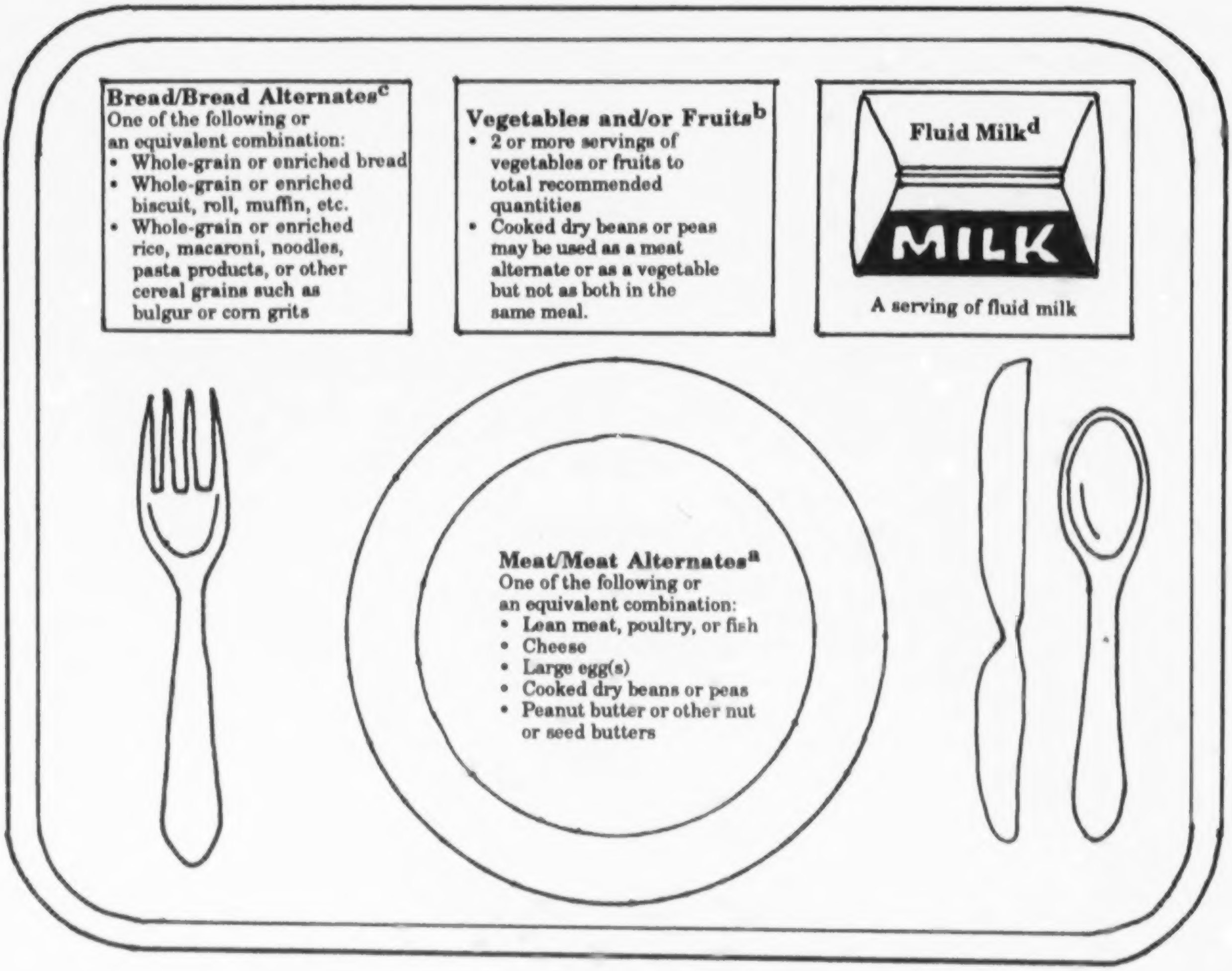
Meat/Meat Alternates
One of the following or
an equivalent combination:
- Lean meat, poultry, or fish
- Cheese
- Large egg
- Peanut butter or other nut or seed butters
- Cooked dry beans and peas
- Nuts and/or seeds

One serving of milk and one serving of fruit and/or vegetable or full-strength fruit juice or vegetable juice are required.

Students may select one serving from Bread/Bread Alternates and one serving from Meat/Meat Alternates, or they may select two servings from either Bread/Bread Alternates or Meat/Meat Alternates.

Appendix C

The School Lunch Pattern



Bread/Bread Alternates[c]
One of the following or
an equivalent combination:
- Whole-grain or enriched bread
- Whole-grain or enriched biscuit, roll, muffin, etc.
- Whole-grain or enriched rice, macaroni, noodles, pasta products, or other cereal grains such as bulgur or corn grits

Vegetables and/or Fruits[b]
- 2 or more servings of vegetables or fruits to total recommended quantities
- Cooked dry beans or peas may be used as a meat alternate or as a vegetable but not as both in the same meal.

Fluid Milk[d]

A serving of fluid milk

Meat/Meat Alternates[a]
One of the following or
an equivalent combination:
- Lean meat, poultry, or fish
- Cheese
- Large egg(s)
- Cooked dry beans or peas
- Peanut butter or other nut or seed butters

[a] Peanuts, soy nuts, tree nuts, or seeds meet no more than 50% of the requirement and must be combined in the meal with at least 50% of other meat or meat alternate. (1 oz. of nuts/seeds is equal to 1 oz. of cooked lean meat, poultry, or fish.)

[b] No more than 1/2 of the total requirement may be met with full-strength fruit or vegetable juice.

[c] Enriched macaroni with fortified protein may be used as a meat alternate or as a bread alternate but not as both in the same meal.

[d] Whole milk and unflavored low-fat milk must be offered. This requirement does not prohibit offering other milk, such as flavored milk or skim milk, along with the above.

Appendix D

Food and Nutrition Board, National Academy of Sciences – National Research Council Recommended Dietary Allowances[a]

							Fat-Soluble Vitamins				Water-Soluble Vitamins							Minerals						
Category	Age (years) or Condition	Weight (kg)	Weight (lb)	Height (cm)	Height (in)	Protein (g)	Vitamin A (μg R.E.)[b]	Vitamin D (μg)[c]	Vitamin E (mg α-T.E.)[d]	Vitamin K (μg)	Vitamin C (mg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg N.E.)[e]	Vitamin B_6 (mg)	Folate (μg)	Vitamin B_{12} (μg)	Calcium (mg)	Phosphorus (mg)	Magnesium (mg)	Iron (mg)	Zinc (mg)	Iodine (μg)	Selenium (μg)
Infants	0.0-0.5	6	13	60	24	13	375	7.5	3	5	30	0.3	0.4	5	0.3	25	0.3	400	300	40	6	5	40	10
	0.5-1.0	9	20	71	28	14	375	10	4	10	35	0.4	0.5	6	0.6	35	0.5	600	500	60	10	5	50	15
Children	1-3	13	29	90	35	16	400	10	6	15	40	0.7	0.8	9	1.0	50	0.7	800	800	80	10	10	70	20
	4-6	20	44	112	44	24	500	10	7	20	45	0.9	1.1	12	1.1	75	1.0	800	800	120	10	10	90	20
	7-10	28	62	132	52	28	700	10	7	30	45	1.0	1.2	13	1.4	100	1.4	800	800	170	10	10	120	30
Males	11-14	45	99	157	62	45	1,000	10	10	45	50	1.3	1.5	17	1.7	150	2.0	1,200	1,200	270	12	15	150	40
	15-18	66	145	176	69	59	1,000	10	10	65	60	1.5	1.8	20	2.0	200	2.0	1,200	1,200	400	12	15	150	50
	19-24	72	160	177	70	58	1,000	10	10	70	60	1.5	1.7	19	2.0	200	2.0	1,200	1,200	350	10	15	150	70
	25-50	79	174	176	70	63	1,000	5	10	80	60	1.5	1.7	19	2.0	200	2.0	800	800	350	10	15	150	70
	51+	77	170	173	68	63	1,000	5	10	80	60	1.2	1.4	15	2.0	200	2.0	800	800	350	10	15	150	70
Females	11-14	46	101	157	62	46	800	10	8	45	50	1.1	1.3	15	1.4	150	2.0	1,200	1,200	280	15	12	150	45
	15-18	55	120	163	64	44	800	10	8	55	60	1.1	1.3	15	1.5	180	2.0	1,200	1,200	300	15	12	150	50
	19-24	58	128	164	65	46	800	10	8	60	60	1.1	1.3	15	1.6	180	2.0	1,200	1,200	280	15	12	150	55
	25-50	63	138	163	64	50	800	5	8	65	60	1.1	1.3	15	1.6	180	2.0	800	800	280	15	12	150	55
	51+	65	143	160	63	50	800	5	8	65	60	1.0	1.2	13	1.6	180	2.0	800	800	280	10	12	150	55
Pregnant						60	800	10	10	65	70	1.5	1.6	17	2.2	400	2.2	1,200	1,200	320	30	15	175	65
Lactating	1st Six Months					65	1,300	10	12	65	95	1.6	1.8	20	2.1	280	2.6	1,200	1,200	355	15	19	200	75
	2nd 6 Months					62	1,200	10	11	65	90	1.6	1.7	20	2.1	260	2.6	1,200	1,200	340	15	16	200	75

[a] The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined.

[b] Retinol equivalents. 1 retinol equivalent = 1 μg retinol or 6μg β-carotene.

[c] As cholecalciferol. 10 μg cholecalciferol = 400 I.U. of vitamin D.

[d] α-Tocopherol equivalents. 1 mg d-α tocopherol = 1 α-TE.

[e] 1 N.E. (niacin equivalent) is equal to 1 mg of niacin or 60 mg of dietary tryptophan.

Adapted from *Recommended Dietary Allowances, 10th Edition*, c. 1989 by the National Academy of Sciences. Published by National Academy Press, Washington, D.C.

Appendix D

Median Heights and Weights and Recommended Energy Intake

Category	Age (years) or Condition	Weight (kg)	Weight (lb)	Height (cm)	Height (in)	REE[a] (kcal/day)	Average Energy Allowance (kcal)[b] Multiples of REE	Per kg	Per day[c]
Infants	0.0-0.5	6	13	60	24	320		108	650
	0.5-1.0	9	20	71	28	500		98	850
Children	1-3	13	29	90	35	740		102	1,300
	4-6	20	44	112	44	950		90	1,800
	7-10	28	62	132	52	1,130		70	2,000
Males	11-14	45	99	157	62	1,440	1.70	55	2,500
	15-18	66	145	176	69	1,760	1.67	45	3,000
	19-24	72	160	177	70	1,780	1.67	40	2,900
	25-50	79	174	176	70	1,800	1.60	37	2,900
	51+	77	170	173	68	1,530	1.50	30	2,300
Females	11-14	46	101	157	62	1,310	1.67	47	2,200
	15-18	55	120	163	64	1,370	1.60	40	2,200
	19-24	58	128	164	65	1,350	1.60	38	2,200
	25-50	63	138	163	64	1,380	1.55	36	2,200
	51+	65	143	160	63	1,280	1.50	30	1,900
Pregnant	1st trimester								+0
	2nd trimester								+300
	3rd trimester								+300
Lactating	1st Six Months								+500
	2nd 6 Months								+500

[a] Calculation of REE (Resting Energy Expenditure) based on FAO equations, then rounded.

[b] In the range of light to moderate activity, the coefficient of variation is ±20%.

[c] Figure is rounded.

Estimated Safe and Adequate Daily Dietary Intakes of Selected Vitamins and Minerals[a]

Category	Age (years)	Vitamins: Biotin (μg)	Pantothenic Acid (mg)	Trace Elements[b]: Copper (mg)	Manganese (mg)	Fluoride (mg)	Chromium (μg)	Molybdenum (μg)
Infants	0.0-0.5	10	2	0.4-0.6	0.3-0.6	0.1-0.5	10-40	15-30
	0.5-1.0	15	3	0.6-0.7	0.6-1.0	0.2-1.0	20-60	20-40
Children and Adolescents	1-3	20	3	0.7-1.0	1.0-1.5	0.5-1.5	20-80	25-50
	4-6	25	3-4	1.0-1.5	1.5-2.0	1.0-2.5	30-120	30-75
	7-10	30	4-5	1.0-2.0	2.0-3.0	1.5-2.5	50-200	50-150
	11+	30-100	4-7	1.5-2.5	2.0-5.0	1.5-2.5	50-200	75-250
Adults		30-100	4-7	1.5-3.0	2.0-5.0	1.5-4.0	50-200	75-250

[a] Because there is less information on which to base allowances, these figures are not given in the main table of RDA and are provided here in the form of ranges of recommended intakes.

[b] Since the toxic levels for many trace elements may be only several times usual intakes, the upper levels for the trace elements given in this table should not be habitually exceeded.

Estimated Sodium, Chloride, and Potassium Minimum Requirements of Healthy Persons[a]

	Age	Weight (kg)[a]	Sodium (mg)[a,b]	Chloride (mg)[a,b]	Potassium (mg)[c]
Mths	0-5	4.5	120	180	500
	6-11	8.9	200	300	700
Years	1	11.0	225	350	1,000
	2-5	16.0	300	500	1,400
	6-9	25.0	400	600	1,600
	10-18	50.0	500	750	2,000
	>18[d]	70.0	500	750	2,000

[a] No allowance has been included for large, prolonged loses from the skin through sweat.

[b] There is no evidence that higher intakes confer any health benefit.

[c] Desirable intakes of potassium may considerably exceed these values (3,500 mg for adults).

[d] No allowance included for growth. Values for those below 18 years assume a growth rate at the 50th percentile reported by the National Center for health Statistics (Hamill et al., 1979 in reference 1) and averaged for males and females.

Adapted from *Recommended Dietary Allowances, 10th Edition*, c. 1989 by the National Academy of Sciences. Published by National Academy Press, Washington, D.C.

Appendix E: Food Composition Table

FOODS	WT (g)	KCAL	PRO (g)	CHO (g)	FAT (g)	PUFA (g)	SFA (g)	CHOL (mg)	A (RE)	C (mg)	B-1 (mg)	B-2 (mg)	NIA (mg)	Ca (mg)	Fe (mg)	Na (mg)
Vegetables																
Broccoli, frozen, chopped 1/2 cup	92	25	2.9	4.9	0.1	0.1	0	0	174	37	0.05	0.08	0.4	47	0.56	22
Carrots, canned, 1/2 cup slices	73	17	0.5	4	0.1	0.1	0	0	1006	2	0.01	0.02	0.4	19	0.47	176
Green beans, canned, 1/2 cup	68	13	0.8	3.1	0.1	0	0	0	24	3	0.01	0.04	0.1	18	0.61	170
Lettuce salad, 1/2 cup shredded	28	5	0.4	1	0.1	0	0	0	53	5	0.01	0.02	0.1	19	0.39	3
Potatoes, hash brown, homemade 1/2 cup	78	163	1.9	16.6	10.9	1.3	4.2	*	*	5	0.06	0.02	1.6	6	0.63	19
Spinach, 1/2 cup boiled	90	21	2.7	3.4	0.2	0.1	0	0	737	9	0.09	0.21	0.44	122	3.21	63
Tomato, 1 raw	123	24	1.1	5.3	0.3	0.1	0	0	139	22	0.07	0.06	0.7	8	0.59	10
Fruits																
Apple, raw w/ skin 1 med.	138	81	0.3	21.1	0.5	0.1	0.1	0	7	8	0.02	0.02	0.1	10	0.25	1
Apricots, raw 3 med.	106	51	1.5	11.8	0.4	0.1	0	0	277	11	0.03	0.04	0.6	15	0.58	1
Banana, raw 1 med.	114	105	1.2	26.7	0.6	0.1	0.2	0	9	10	0.05	0.11	0.6	7	0.35	1
Grapes, raw 1 cup	92	58	0.6	15.8	0.3	0.1	0.1	0	9	4	0.09	0.05	0.3	13	0.27	2
Kiwi, raw 1 med.	76	46	0.8	11.3	0.3	*	*	*	13	75	0.02	0.04	0.4	20	0.31	4
Orange, raw 1 med.	140	65	1.4	16.3	0.1	0	0	0	26	80	0.12	0.06	0.4	56	0.17	1
Orange juice, from concentrate, 8 fl. oz.	249	112	1.7	26.8	0.1	0	0	0	19	97	0.20	0.05	0.5	22	0.24	2
Orange juice, fresh, 8 fl. oz.	248	111	1.7	25.8	0.5	0.1	0.1	0	50	124	0.22	0.07	0.1	27	0.50	2
Peach, raw 1 med.	87	37	0.6	9.7	0.1	0	0	0	47	6	0.02	0.04	0.9	5	0.10	0
Pear, canned light syrup, 1 cup	251	144	0.5	38.1	0.1	0	0	0	0	2	0.03	0.04	0.4	13	0.70	13
Plum, raw 1 med.	66	36	0.5	8.6	0.4	0.1	0	0	21	6	0.03	0.06	0.3	2	0.07	0
Prune juice, 8 fl. oz.	256	181	1.6	44.7	0.1	0	0	0	1	11	0.04	0.18	2	30	3.03	11
Raisins, seedless 2/3 cup	100	300	3.2	79.1	0.5	0.1	0.2	0	1	3	0.16	0.09	0.8	49	2.08	12
Strawberries, raw, 1 cup	149	45	0.9	10.5	0.6	0.3	0	0	4	85	0.03	0.10	0.3	21	0.57	2
Breads and Cereals, Rice, and Pasta																
Bran flakes, 3/4 cup 1 oz.	28	93	3.6	22.2	0.5	*	*	*	375	*	0.40	0.40	5	14	8.10	264
Macaroni, enriched, cooked 1 cup	140	159	5.2	33.7	0.7	*	*	0	*	0	0.20	0.11	1.5	11	2.25	1
Oatmeal, quick, old fashioned, 1/3 cup dry	28	109	4.6	18.4	1.9	*	*	*	*	*	0.19	0.03	0.2	14	1.08	1
Oatmeal, w/ raisins and spice 1 pkg. prep.	158	161	4.3	31.8	1.8	*	*	*	440	*	0.51	0.36	5.5	165	6.58	225
Popcorn, air popped, 1 cup	6	23	0.8	4.6	0.3	*	0	*	*	1	*	0.01	0.1	1	0.20	0
Popcorn, w/ fat and salt, 1 cup	9	41	0.9	5.3	2	*	0.9	*	*	0	*	0.01	0.2	1	0.20	175
Pretzels, 1 oz.	28	111	2.6	22.4	1	*	*	*	*	0	0.09	0.07	1.2	7	0.55	451
Rice, white enriched, cooked, 1/2 cup	80	85	2	19	0	0	0	0	0	0	0	0	1	22	0.70	0
Rolls, dinner/pan 1 roll	28	85	2.4	14	2.1	*	*	*	*	0	0.14	0.09	1.1	33	0.83	155
Wheat bread, 1 slice	24	61	2.3	11.3	1	*	*	0	*	0	0.11	0.08	1.1	30	0.84	129
White bread, 1 slice	24	64	2	11.7	0.9	*	*	*	*	0	0.11	0.07	0.9	30	0.68	123
Whole wheat bread, 1 slice	25	61	2.4	11.4	1.1	*	*	*	*	0	0.09	0.05	1	18	0.86	159

FOODS	WT (g)	KCAL	PRO (g)	CHO (g)	FAT (g)	PUFA (g)	SFA (g)	CHOL (mg)	A (RE)	C (mg)	B-1 (mg)	B-2 (mg)	NIA (mg)	Ca (mg)	Fe (mg)	Na (mg)
Milk, Yogurt, and Cheese																
Lowfat milk 2% fat, 8 fl. oz.	244	121	8.1	11.7	4.7	0.2	2.9	18	140	2	.10	.40	0.2	297	122	122
Skim milk, 8 fl. oz.	245	86	8.4	11.9	0.4	0	0.3	4	149	2	.09	.34	0.2	302	0.10	126
Skim (nonfat dry milk) 8 fl. oz.	245	90	8.8	12.3	0.6	0	0.4	5	149	2	.10	.43	0.2	316	0.12	130
Whole milk, 3.3% fat 8 fl. oz.	227	150	8.0	11.4	8.2	0.3	5.1	33	76	2	.09	.40	0.2	291	0.12	120
Lowfat yogurt 8 fl. oz.	227	144	11.9	16	3.5	0.1	2.3	14	36	2	.10	.49	0.3	415	0.18	159
Fruit flavor yogurt 8 fl. oz.	28	225	9.0	42.3	2.6	0.1	1.7	10	27	1	.08	.37	0.2	314	0.14	121
American, processed cheese 1 oz.	28	106	6.3	0.5	8.9	0.3	5.6	27	82	0	.01	.10	0	124	0.11	406
Cheddar cheese, 1 oz.	28	114	7.1	0.4	9.4	0.3	6.0	30	86	0	.01	.11	0	204	0.19	176
Monterey cheese, 1 oz.	28	106	6.9	0.2	8.6	•	•	•	•	0	•	.11	•	212	0.20	152
Mozzarella cheese, 1 oz.	28	79	7.8	0.9	4.9	0.1	3.1	15	54	0	.01	.10	0	207	0.07	150
Swiss cheese, 1 oz.	28	107	8.1	1	7.8	0.3	5	26	72	0	.01	.10	0	272	0.05	74
Ice cream, vanilla 10% fat 1 cup	133	269	4.8	31.7	14.3	0.5	8.9	59	133	1	.05	.33	0.1	176	0.12	116
Meat, Poultry, Fish, Dry Beans and Peas, Eggs, Nuts and Seeds																
Bacon, cured, 3 med. pieces	19	109	5.8	0.1	9.4	1.1	3.3	16	0	6	0.13	0.05	1.4	2	0.31	303
Beef, ground, baked well done 3.5 oz.	100	274	30.3	0	16	0.6	6.3	107	•	0	0.05	0.31	5.4	9	2.96	64
Beef and vegetable stew, 1 cup	245	218	15.7	15.2	10.5	•	4.9	•	•	17	0.15	0.17	4.7	29	2.90	91
Chicken, light meat w/o skin, roasted	100	173	30.9	0	4.5	1	1.3	85	9	0	0.07	0.12	12.4	15	1.06	77
Egg, 1 large fried	46	83	5.4	0.5	6.4	0.7	2.4	246	83	0	0.03	0.13	0	26	0.92	144
Peanut butter, 1 Tbsp.	16	95	4.6	2.2	8.2	2.5	1.7	0	•	•	0.01	0.01	1.9	5	0.30	75
Peanuts, dry roasted 1 oz.	28	164	6.6	6.0	13.9	4.4	1.9	0	0	0	0.12	0.03	3.8	15	0.63	228
Peanuts, oil roasted 1 oz.	28	165	7.6	5.3	14	4.4	1.9	0	0	0	0.08	0.03	4.2	24	0.54	4
Pinto beans, 1 cup boiled	171	235	14	43.9	0.9	0.3	0.2	0	0	4	0.32	0.16	0.7	82	4.47	3
Pork chops w/brown gravy 6.5 oz. entree	184	252	22.1	4.4	16.2	•	•	•	•	1	0.43	0.20	4.3	9	2.50	367
Sausage, fresh 1 link	13	48	2.6	0.1	4.1	0.5	1.4	11	•	0	0.10	0.03	0.6	4	0.16	168
Sunflower seeds, 1 oz.	28	165	5.5	6.8	14.1	9.3	1.5	0	•	•	0.03	0.07	2	20	1.1	1
Fast Foods																
Cheeseburger, 1 reg. sandwich	112	299	14.8	28.3	15.1	•	•	45	•	1	0.26	0.24	3.7	136	2.33	672
French fries, 3 oz.	85	274	3.4	33.1	14.2	•	•	14	•	5	0.11	0.03	1.8	14	0.71	30
Hamburger, w/ 4 oz. meat	174	444	24.9	37.6	21.1	•	•	71	•	2	0.38	0.38	7.8	75	4.84	762
Pizza, cheese 1 slice	120	290	14.6	39.1	8.6	•	•	56	•	2	0.34	0.29	4.2	220	1.61	698
Pizza, pepperoni 1 slice	120	306	13	36.7	11.5	•	•	•	•	2	0.32	0.29	5.1	196	2.52	817

FOODS	WT (g)	KCAL	PRO (g)	CHO (g)	FAT (g)	PUFA (g)	SFA (g)	CHOL (mg)	A (RE)	C (mg)	B-1 (mg)	B-2 (mg)	NIA (mg)	Ca (mg)	Fe (mg)	Na (mg)
Miscellaneous																
Cola, 12 fl. oz.	370	151	0.1	38.5	0.1	*	*	0	0	0	0	0	0	9	0.13	14
Cola, diet, 12 fl. oz.	355	2	0.2	0.3	0	0	0	0	0	0	0.02	0.08	0	12	0.11	21
Orange soda, 12 fl. oz.	372	179	0	45.8	0	*	*	0	*	0	0	0	0	15	0.26	52
Milk choc. bar, 1.65 oz.	47	254	3.8	27.1	14.5	*	*	*	*	*	0.04	0.17	0.2	94	0.52	35
Milk choc. w/ almonds	28	151	2.6	14.5	10.1	*	4.5	*	*	0	0.02	0.12	0.2	65	0.50	23
Peanut butter and choc. bar, 2 oz.	57	260	4	38	12	*	*	*	*	*	*	*	*	*	*	100
Peanut bar, 1.6 oz.	45	240	8	21	14	*	*	*	*	*	*	*	*	*	*	110
Bite-size fruit snacks, 1 pouch	26	100	1	21	2	*	*	*	*	*	*	*	*	*	*	105
Corn chips, 1 oz.	28	153	1.7	16.6	8.8	*	*	*	*	0	0.05	0.3	0	2	*	218
Potato chips, 1 oz.	28	148	1.8	14.7	10.1	5.2	2.6	0	0	12	0.04	0.01	1.2	7	0.34	133
Tortilla chips, reg. or nacho 1 oz.	28	150	2	18	8	*	*	*	*	*	*	*	*	*	*	155
Brownie w/nuts—homemade 1 brownie	20	97	1.3	10.2	6.3	*	1.4	*	*	0	0.04	0.02	0.1	8	0.40	50
Cake, devil's food—homemade 1 piece	60	227	3.4	30.4	11.3	*	*	*	*	0	0.08	0.11	0.7	68	1.03	160
Doughnuts, yeast, 1 doughnut	42	176	2.7	16	11.3	*	2.8	*	*	0	0.07	0.07	0.6	16	0.60	99
Pie, cherry—homemade, 1/8 pie	118	308	3.1	45.3	13.3	*	3.5	*	*	0	0.02	0.02	0.6	17	0.40	359
Margarine, soft 1 Tbsp.	*	100	0	0	11	4	2	0	*	*	*	*	*	*	*	95
Molasses, blackstrap, 1 Tbsp.	20	43	0	11	0	0	0	*	*	*	0.02	0.04	0.4	137	3.20	19
Salad dressing—thousand island, 1 Tbsp.	16	59	0.1	2.4	5.6	3.1	0.9	*	50	*	*	*	*	2	0.10	109
Sugar, white granulated, 1 tsp.	4	15	0	4	0	0	0	*	*	0	0	0	0	0	0	0

Sources: USDA Food Handbooks

*Denotes "information not available." Do not assume that the value would be zero.

The nutrient data provided in Appendix E: Food Composition Table should be seen only as an approximation and used strictly as a guide in learning activities.

The many factors which affect the amounts of nutrients in foods include:

- animal diets
- mineral content of soil
- types of fertilizer used on samples
- season of the year
- method of storage
- length of storage
- processing methods
- methods of analysis
- moisture content of analyzed samples
- method of food preparation

Therefore, many different nutrient values will be reported in a variety of reliable resources.

LEGEND

WT=weight
KCAL=calories
PRO=protein
CHO=carbohydrate
FAT=fat
PUFA=polyunsaturated fatty acids
SFA=saturated fatty acids
CHOL=cholesterol
A(RE)=vitamin A (retinol equivalent)
C=vitamin C (ascorbic acid)
B-1=vitamin B-1 (thiamin)
B-2=vitamin B-2 (riboflavin)
NIA=niacin
Ca=calcium
Fe=iron
Na=sodium

Appendix F

Nutrition and Your Health:
DIETARY GUIDELINES FOR AMERICANS

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1 **Eat a variety of foods.**

People need more than forty different nutrients for good health. Essential nutrients include vitamins, minerals, amino acids from protein, certain fatty acids from fat, and sources of calories (protein, carbohydrates, and fat). These nutrients should come from a variety of foods, not from a few highly fortified foods or supplements. Get the nutrients needed by choosing different foods you enjoy eating from five major food groups. These groups are vegetables, fruits, grain products, milk and milk products, and meats and meat alternatives.

2 **Maintain desirable weight.**

Being overweight or underweight increases chances of developing health problems. Obesity is common in the United States. It is linked with high blood pressure, heart disease, stroke, the most common type of diabetes, certain cancers, and other types of illness.

3 **Choose a diet low in fat, saturated fat, and cholesterol.**

The higher levels of saturated fat and cholesterol in the diet are linked to increased risk for heart disease. A diet low in fat makes it easier to include the variety of foods you need for nutrients without exceeding your calorie needs because fat contains over twice the calories of an equal amount of carbohydrates or protein.

4 **Choose a diet with plenty of vegetables, fruits, and grain products.**

Vegetables, fruits, and grain products are important parts of a varied diet discussed in the first guideline. They are emphasized in this guideline especially for their complex carbohydrates, dietary fiber, and other food components linked to good health.

5 **Use sugars only in moderation.**

Sugars and many foods that contain them in large amounts supply calories but are limited in nutrients. Thus, they should be used in moderation by most healthy people and sparingly by people with low calorie needs. The more often these foods—even in small amounts—are eaten the greater the risk for tooth decay.

6 **Use salt and sodium only in moderation.**

Table salt contains sodium and chloride—both are essential in the diet. However, most Americans eat more salt and sodium than they need. In the United States, about one in three adults has high blood pressure. If these people restrict their salt and sodium, usually their blood pressure will fall.

7 **Avoid alcoholic beverages.**

Drinking alcoholic beverages is illegal in Texas for people under age 21. Heavy drinking of alcoholic beverages is related to malnutrition, liver disease, and some forms of cancer. Drinking alcoholic beverages during pregnancy can damage the developing fetus. People who drink alcoholic beverages before driving increase their risk of car accidents.

Sources: U.S. Department of Agriculture and U.S. Department of Health and Human Serv[illegible]s *Home and Garden Bulletin* No. 232, "Nutrition and Your Health: Dietary Guidelines for Americans," Third edition, 199[illegible]
U.S. Department of Agriculture and Human Nutrition Information Service, *Dietary Guidelines and Your Diet: Home Economics Teacher's Guide*, February 1988.

Appendix G
Glossary

Additive–A substance added to a food product to improve nutritional value, color, flavor, texture, or shelf life.

Amino Acids–The structural units of proteins.

Anorexia Nervosa–An eating disorder characterized by an obsessive and compelling desire to be thin.

Artificial Sweeteners–Synthetic substances used as sweetening agents in foods and beverages.

Atherosclerosis–An accumulation of lipid plaque within the arterial wall which results in a narrowing of the artery; sometimes referred to as "hardening of the arteries."

Bacteria–Single-celled organisms that can live anywhere people can live.

Basal Metabolism–The amount of energy your body needs to maintain basic processes at rest.

Bulimia Nervosa–An eating disorder characterized by self-induced vomiting or by the use of laxatives following binge eating.

Calorie–A unit of measure used to state the energy content of different foods. It is referred to as "kcalorie" in most science and nutrition texts.

Carbohydrate Loading–A diet that is very high in complex carbohydrates. Four or five days prior to an event lasting more than two hours, about 65-70 percent of total calories are consumed as complex carbohydrates in an attempt to increase muscle glycogen stores.

Carbohydrates–Nutrients that supply energy for body functions; simple carbohydrates are called sugars. Starch, glycogen, and some fibers are complex carbohydrates.

Cardiovascular Disease–A term that covers all of the diseases of the heart and blood vessels.

Cellulose–The fibrous material found in plants that is commonly referred to as fiber or roughage. It is indigestible by humans.

Cholesterol–An odorless, soft, waxy substance found in every cell in the body.

Colostrum–A thick alkaline fluid with a lemon yellow color, suited to the immature digestive enzyme system of the newborn. It is rich in protein and also contains antibodies.

Complementary Proteins–The combining of two or more foods that each lack some amino acids in such a way that the essential amino acids are supplied by the other.

Complete Proteins–Proteins that come from animal sources such as meat, milk, cheese, eggs, poultry and fish. Complete proteins supply all of the essential amino acids.

Complex Carbohydrates–Starches, glycogen, and fibers.

Cruciferous–Vegetables in the cabbage family whose leaves form a cross. They have been shown to protect against cancer in laboratory animals.

Culture–The knowledge, beliefs, customs, and traditions shared by a group of people within a society.

Custom–A practice or way of doing things that has been handed down from one generation to the next.

Deficiency–Lacking in something essential. Nutritional deficiency occurs when sufficient amounts of essential nutrients are not present in the diet.

Diabetes–A genetic disorder in which the body does not produce or properly use insulin. It is the inability of the body to metabolize or use glucose, also known as sugar, properly.

Disaccharides–Carbohydrate that is formed when two glucose molecules are joined together.

Ethnic Group–A group of people with common racial and/or cultural characteristics such as religion, language, national origin, or tradition which makes them a distinct subgroup of society. These characteristics are based on physical or cultural traits or both.

Electrolytes–Minerals that affect the way fluid is distributed in the body and aid the nervous system in transmitting the nerve impulses that control muscle action.

Enrichment–The process in which the nutrients that have been lost in processing are replaced in amounts equal to those originally present or in increased amounts.

Essential Amino Acids–Amino acids that must be provided by the diet. The body cannot produce essential amino acids sufficiently to meet the body's needs. There are nine essential amino acids.

Fat–Semisolid, energy-filled organic compounds called lipids that are found in animal and plant tissues. The body stores excess energy in the form of fat.

Fat-soluble Vitamins–Vitamins A, D, E, and K. They cannot be dissolved in water, so they are stored in body fat until they are transported to the cells by the blood.

Fiber–A group of substances found in plants that the body's digestive tract is unable to break down.

Food Binge–The overindulgence of food without control or rational judgment concerning the amount being consumed.

Food Chain–The system in which matter and energy are transferred from organism to organism in the form of food.

Food Web–The linkage of organisms to one another by their dependence on each other for food.

Food-borne Infection–A disease caused by eating food containing harmful microorganisms.

Food-borne Intoxication–An illness caused by poisons or toxins in the food a person eats.

Formulated Foods–Food products developed to supplement diets and feeding programs for people who are malnourished or suffering from some nutritional deficiency. Also includes foods that combine nutrients into the exact proportions needed by a certain group of people such as formulas for feeding babies.

Fortification–The addition of nutrients that may or may not be found naturally in a product.

Glucose–The major sugar found in the bloodstream that supplies energy to the body.

Glycogen–The body's storage form of glucose.

Hypertension–High blood pressure.

Incomplete Proteins–Protein foods that do not contain all of the essential amino acids needed by the body.

Lactation–The secretion or formation of milk; the period of milk production.

Lactovegetarian Diet–A diet that consists of only plant foods and dairy products.

Lacto-ovo-vegetarian Diet–A diet that consists of only plant foods, dairy products, and eggs.

Light or Lite–There are no legal definitions for this term.

Linoleic Acid–One of the essential fatty acids that must be provided in the diet. It is found in leafy, green vegetables and corn, safflower, and soybean oils.

Lipids–A term used interchangeably with the word fat to describe fats, oils, and fat-related substances.

Macrominerals–Minerals found in large amounts in the body.

Malnutrition–The term that refers to either undernutrition or overnutrition.

Meat Analogues–Food products made from plant proteins that have been shaped and formed to resemble meat products. An example is tofu.

Megadose–Large doses of nutrients, usually vitamins, for treatment or prevention of an ailment, often self-prescribed.

Microminerals–Minerals that are found in small amounts in the body; they are also called trace elements.

Microorganisms–Organisms that are so small they can only be seen through a microscope. They include molds, yeasts, and bacteria.

Monosaccharides–The simplest form of carbohydrates.

Monounsaturated Fats–Fats that have less hydrogen than saturated fats; can be found in avocados, peanut oil, canola oil, and olive oil.

Nutrient Density–A description of the amount of nutrients a food contains compared to its calories.

Nutrient–Life sustaining chemical substances that nourish and promote the growth of the human body.

Nutrients–Invisible substances that work with the body to help people grow and have energy for work and play.

Nutrition–The study of nutrients and how the body uses them.

Oil-free–A food that contains no oil, no fat, and is cholesterol free, unless egg yolks are included.

Oils–Lipids that are in a liquid state at room temperature.

Plaque–Mounds of lipid matter that accumulate on the inner walls of the arteries.

Polysaccharides–Complex carbohydrates.

Polyunsaturated Fats–Fats that come from vegetable oils and fish oils.

Promoter–A substance that does not initiate cancer but does favor its development once the initiating event has occurred.

Protector Foods–Foods that may help lower the risk of certain cancers.

Protein Packing–A diet that overloads on protein.

RDA–The Recommended Dietary Allowances for Americans that serves as a guideline for determining the amounts of nutrients a normal, healthy individual needs each day.

Reduced Calorie–A food label term that refers to a food that contains at least one-third fewer calories than the food it most resembles.

Refinement–The removal of the bran and germ from cereal grains during processing. These cereals provide only calories and incomplete protein unless they have been enriched.

Restoration–The process of replacing nutrients in a food product that were lost during processing.

Saturated Fats–Fats that are found in animal foods such as meat and dairy products and in oils such as coconut oil and palm oil.

Shelf Life–The length of time a food holds its original flavor and quality.

Simple Carbohydrates–Any of the sugars.

Standard of Identity–Specifications set by the FDA that list the ingredients a food must contain if it is to be called by a particular name (catsup, mayonnaise, ice cream, etc). The ingredients do not have to be listed on the food label if the product meets the standard of identity.

Starch–The most abundant polysaccharide; a complex form of carbohydrate.

Stir-frying–The quick cooking and stirring of foods in a tiny amount of oil or fat over high heat.

Synthetic Foods–Manufactured food products that are made from artificial chemicals that resemble those naturally found in foods.

Thermic Effect of Food–The amount of energy used by the body during digestion and absorption of nutrients from food.

Tofu–A cake-like product made from soybeans and water into a bean curd high in protein with few calories.

Triglycerides–The chemical structure of fat that contains carbon, hydrogen, and oxygen atoms. Most fats in the body and in food are in the form of triglycerides.

Unit Pricing–A system in which stickers on store shelves give costs per unit of weight or per quantity for each product.

Vegen Diet–A diet that consists of only plant foods such as fruits, vegetables, legumes, nuts, seeds, and grains. All animal products are omitted from the diet.

Vegetarian Diet–A diet consisting only or primarily of plant products; no meat is consumed.

Viruses–The smallest and perhaps simplest form of life known. They cause illnesses such as colds, influenza, and infectious hepatitis.

Vitamins–Organic compounds that are necessary in the diet in small amounts for normal growth, maintenance of health, and reproduction.

Water-soluble Vitamins–Vitamins that are easily dissolved by water and therefore are not stored in the body; the B vitamins and vitamin C.

Whole Grain–Grains and grain products containing the entire seed of the plant including the bran, the germ, and the endosperm.

Yeasts–Fungi that require sugar, moisture, and proper temperature for survival.

Appendix H
Suggested Instructional Strategies

1. abstracts
2. advertisement
3. art gallery
4. attitude scales
5. block picture story
6. book cover
7. brainstorming
8. bulletin board
9. buzz groups
10. cardboard relief
11. cartoons
12. case study
13. chart
14. checklist
15. choral reading
16. cinquain
17. city council meeting
18. collage
19. computer games
20. computer reviews
21. computer problems
22. construction
23. costume
24. creative writing
25. crosscut diagram
26. debate
27. demonstration of a technique
28. diagrams/drawings
29. diamante
30. diorama
31. discussions
32. ditto
33. editorial
34. essay
35. exhibits
36. experiment
37. fact file
38. fairy tale
39. field trips
40. films
41. flannel boards
42. flip book
43. game board
44. geometric shapes
45. glossary
46. greeting card
47. guest speaker
48. haiku
49. illustrated story
50. interrupted film
51. interview
52. jigsaw puzzle
53. journals
54. laboratory experiences
55. letter (friendly)
56. letter to the editor
57. limerick
58. magazines
59. maps
60. minicenters
61. mobiles
62. models
63. movie making
64. mural
65. museum
66. newscast
67. newspaper story
68. news report
69. observation
70. one-act play
71. oral report
72. pamphlet
73. panel discussion
74. pantomime
75. photo essay
76. picture dictionary
77. picture with information and diagram
78. pictures (photographs)
79. play
80. poem
81. poster
82. project cube
83. puppet
84. puppet show
85. questionnaires
86. rating scales
87. rebus story
88. recordings
89. role playing
90. samples
91. science fiction story
92. score cards
93. scrapbook
94. simulation experiences
95. skit
96. slides
97. song (original)
98. songs (collection)
99. stained glass
100. stencil
101. stitchery
102. story
103. storytelling
104. survey
105. taped recording
106. television game show
107. textbook
108. town meeting
109. transparency
110. T-shirt design
111. vocabulary
112. window-shade story, game, poster
113. worksheet
114. written reports

Appendix I
Health Hotline of Agencies and Organizations

Eating Disorders

American Anorexia/Bulimia Association, Inc.
133 Cedar Lane
Teaneck, New Jersey 07666
(210) 836-1800

Anorexia Nervosa and Associated Disorders, Inc.
P.O. Box 7
Highland Park, Illinois 60035

Bulimia, Anorexia Self-Help
6125 Clayton Ave., Suite 215
St. Louis, Missouri 63139
(800) 227-4785

Center for the Study of Anorexia and Bulimia
One W. 91st St.
New York, New York 10024
(212) 595-3449

National Anorexic Aid Society, Inc.
5796 Karl Road
Columbus, Ohio 43229
(614) 436-1112

Food Labeling, Legislation, Policy, and Safety

Center for Food Safety and Applied Nutrition
Food and Drug Administration
200 C St. S.W., Room 3321
Washington, D.C. 20204
(202) 245-1236

Center for Science in the Public Interest
1501 16th St. N.W.
Washington, D.C. 20036
(202) 332-9110

Food and Drug Administration, Consumer Inquiries
5600 Fishers Lane
Rockville, Maryland 20857
(301) 443-3170

Food Safety and Inspection Service
Information Division
Department of Agriculture
14th St. and Independence Ave. S.W.
Washington, D.C. 20250
(202) 447-9113

Nutrition Education and Health Information

American Cancer Society
Medical Library
4 West 34th St.
New York, New York 10001
(212) 736-3030

American Diabetes Association
505 8th Ave.
New York, New York 10018
(212) 947-9707

American Heart Association
7320 Greenville Ave.
Dallas, Texas 75231
(214) 750-5300

Centers for Disease Control
Office of Public Affairs
1600 Clifton Road N.E.
Atlanta, Georgia 30333
(404) 329-3286

Juvenile Diabetes Foundation
60 Madison Ave.
New York, New York 10010
(800) 223-1138

National Diabetes Information Clearinghouse
Box NDIC
Bethesda, Maryland 20892
(301) 468-2162

Beltsville Human Nutrition Research Center
Ag Research Service
U.S. Department of Agriculture
Room 223, Bldg. 308
Beltsville, Maryland 20705
(301) 244-2157

National Cancer Institute
NIH Bldg. 31, Room 10A18
Bethesda, Maryland 20892
(301) 496-5583

Bureau of Health Care Delivery and Assistance
Health Resources and Services Administration
Public Health Service
Parklawn Building, Room G-05
5600 Fishers Lane
Rockville, Maryland 20857
(301) 443-2320

Community Nutrition Institute
2001 S St. N.W.
Washington, D.C. 20009
(202) 462-4700

Human Nutrition Information Service
Food and Consumer Services
U.S. Department of Agriculture
6505 Belcrest Road
Hyattsville, Maryland 20782
(301) 436-7725

National Health Information Clearinghouse
P.O. Box 1133
Washington, D.C. 20013
(800) 336-4797

President's Council on Physical Fitness and Sports
450 Fifth St. N.W., Room 7103
Washington, D.C. 20001
(202) 272-3421

Tufts University Diet and Nutrition Letter
80 Boylston St., Suite 353
Boston, Massachusetts 02116
(617) 482-3530

American Dietetic Association
126 W. Jackson Boulevard, Suite 800
Chicago, Illinois 60606-6995
(800) 366-1655

National Dairy Council
6300 N. River Road
Rosemont, Illinois 60018-4233
(708) 696-1860

Nutrition Education and Training Program
Texas Department of Human Resources
The Library 434-W
701 West 51st Street
P.O. Box 2960
Austin, Texas 78769
(512) 450-3530

Texas Agricultural Extension Service
Special Services Bldg., Room 205 B
Texas A&M University
College Station, Texas 77843
(409) 845-1146

Food Industry Associations

Food Marketing Institute
1750 K St. N.W.
Washington, D.C. 20006
(202) 452-8444

Food Processors Institute
1401 New York Ave. N.W., Suite 400
Washington, D.C. 20005
(202) 393-0890

Grocery Manufacturers of America
1010 Wisconsin Ave. N.W., Suite 800
Washington, D.C. 20007
(202) 337-9400

Milk Industry Foundation
888 16th St. N.W., 2nd Floor
Washington, D.C. 20006
(202) 296-4250

National Association of Wheat Growers
415 Second St. N.E., Suite 300
Washington, D.C. 20002
(202) 547-7800

National Meat Association
734 15th St. N.W.
Washington, D.C. 20005
(202) 347-1000

Wheat Flour Institute
600 Maryland Ave. S.W.
Washington, D.C. 20024
(202) 484-2200

Texas Beef Industry Council
8310 Capitol of Texas Highway
Austin, Texas 78731
(512) 345-3531

Associated Milk Producers, Inc. (AMPI)
Consumer Services
P.O. Box 5007
Arlington, Texas 76005
(817) 461-2674

Florida Department of Citrus
School Marketing Department
P.O. Box 148
Lakeland, Florida 33802

National Livestock and Meat Board
444 N. Michigan Ave.
Chicago, Illinois 60611

Texas Education Agency
1701 North Congress Avenue
Austin, Texas 78701

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